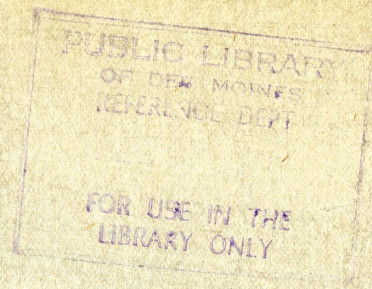


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MAJOR STREETS

Existing and Proposed

DES MOINES

1925

A PRELIMINARY
MAJOR STREET PLAN
for
DES MOINES, IOWA

1/4 Bar

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A thorough understanding of the growth problems of Des Moines is essential to the preparation of a sound zoning plan. The Zoning Commission has authorized the surveys by which such an understanding may be had. The streets of the city, the facilities for public transportation, railroads and industries, parks and recreation agencies, public buildings and other features that affect the city's appearance, all these will be subject to extended investigation, study and reports. This is a report on major streets and is the first of the series to be submitted.

COMMISSIONERS
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Foreword

In many respects Des Moines is an unusual city. Its population is not large but its area is greater than that of Buffalo, Pittsburgh or San Francisco. It is a capital city and unlike many others possesses a certain dignity of appearance which gives it distinction. The grounds of the state are extensive and well improved; the business district is impressive, and the civic center on the river is a notable achievement. Moreover, Des Moines has industries and encourages their development, yet thus far, fortunately, has escaped the inevitable blight of ugliness and squalor that usually follows industrial growth in American cities.

There is evidence everywhere too that the people who live in Des Moines have more than a casual interest in its well-being. They have purchased homes in such numbers that the Federal census gives Des Moines first place in home ownership. This accounts in large measure for the well-kept residential districts, the absence of tenements, and the widespread appreciation of trees, hills, ravines, rivers, and other natural endowments of the city.

Afterthought rather than forethought, however, is largely responsible for whatever merit is found in the general make-up of Des Moines today. The capitol surroundings were reclaimed by the state. The civic center represents a recovery of once-abused river front property. In the opening and improving of streets Des Moines has been put to great expense. It has borne these added financial burdens with extraordinary good-will, however, and has accomplished more in civic development than scores of larger cities. And it has done this without comprehensive city plans.

The fact remains, however, that much of the cost of making Des Moines a first-class city is chargeable to lack of foresight. Correcting mistakes has become an absorbing interest; prevention is scarcely considered. Meanwhile things are being done every day that will require more costly corrective action in a few years.

Yet the prevention of mistakes is the primary function of a city plan. Because prevention is not as spectacular as tearing down buildings and opening new streets through improved property, the value of this phase of the city planning program is often overlooked. Des Moines has done little to direct its growth and expansion. It has been handicapped by limited legal power and authority.

The state of Iowa has not provided its cities and towns with an adequate measure of control over their own physical development. In the matter of regulating the opening of new streets, for instance, Des Moines is practically helpless. Only recently has it received power to differentiate between residential, industrial and commercial districts and this newly acquired authority is only a part of that which is needed to enable the city to plan its future growth with foresight and intelligence. Des Moines, therefore, must have at the earliest possible moment the full statutory powers commonly granted to cities in other states for city planning purposes. The need of new laws is paramount. The preventive values of a city plan cannot be fully realized without them. State granted city planning authority will make possible without burdensome expense the creation of a more attractive and praiseworthy city.

Summary of Recommendations

The present arrangement of streets which Des Moines is required to use was not devised to meet the circulation requirements of the community. Ever since Des Moines was incorporated, its streets have been planned by men who were more interested in selling land than in laying out the highways and traffic arteries of a great city. The result is that the city today finds itself in possession of a somewhat faulty equipment of thoroughfares. There are nearly 1500 unnecessary jogs and terminations in its street system. Numerous streets are too steep to be usable. Important thoroughfares are too narrow and often end abruptly. Residential and industrial districts remain undeveloped because of the difficulty of reaching them. For the correction of mistakes made in the existing street system nearly \$2,000,000 has been spent in the last seven years and grading expense has run even higher. This amounts to a sort of super-tax upon property owners, which they must continue to pay until the city finds means of stopping improper land platting.

It is apparent after a study of the circulation problems of Des Moines that the city's primary need is for a measure of control over all activities which affect its structural development. This control can best be secured through a law authorizing the creation of a City Plan Commission and giving this Commission power to pass upon all new land plots within and for a distance outside the city. Since the presentation of this report in preliminary form, the Zoning Commission has secured the passage of a bill authorizing the creation of a City Plan Commission. The bill to require submission of subdivision plots and approval of the City Plan Commission before they may be accepted for record, however, did not pass. A Planning Commission can now be created in Des Moines but so long as it lacks this one power, it cannot do a great deal to stop such costly mistakes as have characterized street development in the city in years past. Definite authority to pass upon subdivision plans must be secured. This preventive service alone would save the city many times over the yearly cost of maintaining a Planning Commission.

The correction of faults in the street system, while really secondary in importance to the prevention of further mistakes, is nevertheless a pressing problem in Des Moines. There are certain improvement projects which deserve immediate consideration. It is proposed in this report that special attention be given the following projects:

1. The reconstruction of the Eighteenth Street viaduct cannot long be delayed. From the standpoint of circulation it would be better to relocate the new viaduct so that its northern terminus would meet the intersection of Walnut and Sixteenth street. It is proposed further that Seventeenth Street be widened between Ingersoll and Grand and the corners at both Ingersoll and Grand be cut back to a greater radius. Seventeenth Street then should be extended south of Grand to join a new diagonal street running parallel to the railroads and connecting Mulberry, Walnut and Locust directly with Ingersoll and Seventeenth. There is nothing substantial in the way of this improvement at the present time and it should be undertaken at the earliest opportunity. It is recommended that the grade of the new street be kept well above the grounds of the old water works and that all properties which remain below grade when the streets are reconstructed be filled with the excess material now found on property along Fifth Street and elsewhere in the vicinity of this improvement.

2. It is imperative that Beaver Avenue be continued diagonally northwest. The opening of this new street would increase property values in the northwest section considerably more than would be necessary to pay for the improvement. The work can never be done at less cost than now. In order to make this thoroughfare complete, it is recommended that Beaver Avenue be widened to 100 feet to Forest and Forest widened to 100 feet to Thirtieth. From the intersection of Thirtieth and Forest, it is proposed that a new connection be opened to Twenty-eighth and University. Traffic from the northwest diagonal (Beaver Avenue) would be enabled to reach the central portion of the city over Cottage Grove, Crocker Avenue and Keosauqua Way, and Twentieth and Twenty-first to Ingersoll and Grand. This thoroughfare throughout its entire length should be the same width, 100 feet.

3. The completion of Keosauqua Way. This new street should be extended to an intersection with Twentieth Street just south of Forest Avenue. Twentieth Street should be widened from this point north preferably to 100 feet. Keosauqua Way should be carried eastward along Chestnut Street to a connection with the Grand Avenue bridge. This improvement, especially east of Fourth Street, should be undertaken as soon as possible. The jog in Chestnut Street should be corrected by widening the street on the south side between Fourth and Second.

4. The correction of the faults in University Avenue should be given early consideration. At this time it would seem advantageous to correct the jogs at Ninth Street and Sixth Avenue by extending University Avenue almost straight through the three blocks. On the east side, University Avenue should join Filmore Street at East Twelfth Street. The latter should be extended eastward to meet University Avenue by elim-

inating the jog at East Fourteenth Street. University Avenue should then be carried eastward from Dixon Street to join the existing eastern section of University Avenue. Provision should be made now for the widening of this entire thoroughfare, where necessary, to 80 feet at least.

5. The widening and extension of Ingersoll Avenue is needed. This street should be widened to 80 feet at least west of Forty-ninth Street and should be extended to meet the crossing of the C., M. & St. P. at Sixty-third Street.

6. Avenue Frederick Hubbell should be widened to at least 100 feet now and the same may be said of Indianola Road.

7. South of the business district is an extensive industrial area which is served by an inadequate group of streets. Fifth, Seventh and Ninth Streets now attract a considerable proportion of the traffic concerned with this industrial district and carry it directly into the business section. It is proposed that a new east and west industrial traffic way be created by extending and developing Tuttle Street. This street would connect with the proposed new bridge at Eighteenth Street and eastward would cross the river on the line of Raccoon Street.

8. Woodland Avenue and Pleasant Street at the present time attract a share of the traffic entering and leaving the northern section of the business district. The effectiveness of these streets, however, is limited. They lack continuity. Circulation in the business district would be improved if Woodland were widened to 80 feet and extended to Pleasant Street and the latter widened eventually to Seventh Street. Between Twenty-fourth and Twenty-seventh Streets, by means of a diagonal cutoff, Woodland and High should both be connected directly with Ingersoll.

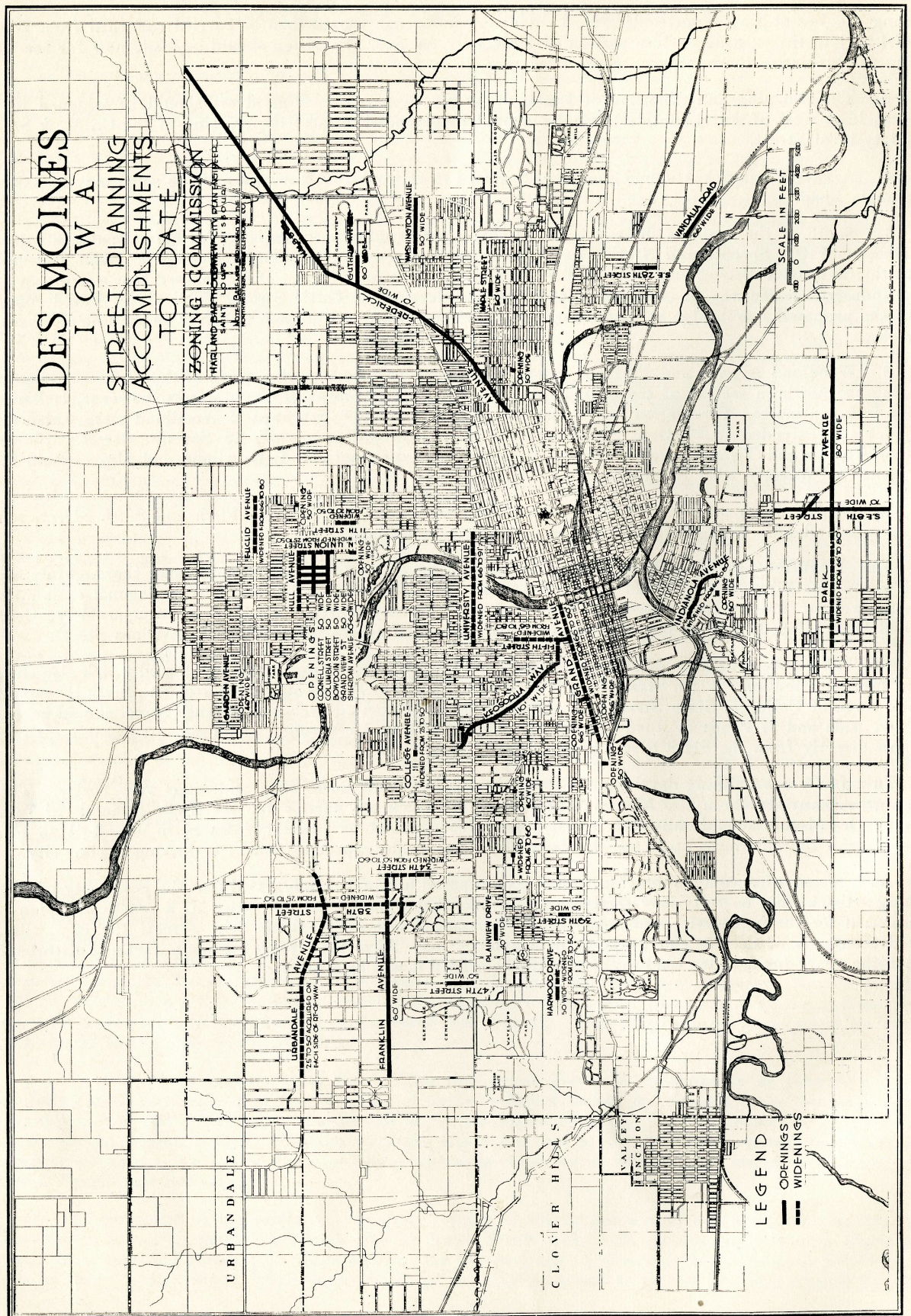
9. On the south side the most important connection needed is between Fifth and Sixth Street, south of Indianola Road. This project should be undertaken immediately.

10. In future years it will be highly desirable to have Center Street a continuous thoroughfare west of Twenty-eighth Street. It should be widened to 80 feet and should be connected by a diagonal cut-off from a point west of Twenty-eighth street to Woodland near Twenty-fourth. East of Keosauqua Way, Center should be developed as a six-line thoroughfare and connected across the river to Des Moines Street.

11. There are a number of street widenings in addition to these previously mentioned which also should have prompt attention. Fifth Street should be widened north of School and connected with Sixth through the block north of College. Sixth Street also should be widened north of School. Seventh Street should be made 80 feet wide and at Prospect Road a connection should be introduced which would make it possible for traffic to flow directly from the Sixth Street bridge into Seventh Street.

In a few years building development along these streets will make such widenings very costly. There are a great many streets in Des Moines in fact which are much too narrow for the traffic demands of future years. Des Moines should enlist the widest possible cooperation of property owners in an effort to bring these narrow thoroughfares up to the standard which one would expect to find in a thriving capital city.

As a means of accomplishing the widenings proposed herein, it is suggested that the possibility of establishing setback lines be fully investigated on every street designated for widening. If a practicable plan can be devised for the immediate condemnation of the required easements along these streets the city will be saved thousands of dollars and property development may then take place without further disturbance. When the space for a wider roadway is eventually needed it will be available.



FRONTISPIECE

Introduction

Major streets have an interest for the entire community. They are the arteries of the urban body. If they are inadequate in size and improperly arranged, circulation is affected. The strength of the community and the vigor of its economic and social life depend upon the manner in which its major streets have been developed.

Des Moines in years past has not differentiated these most important streets from the great number of correlated minor ones. All streets have been viewed alike and as a consequence faults have developed in the street system. Some short local byways are wide when they might be narrow; other long, straight, heavily-used arteries are narrow when they should be wide. Abrupt endings and sharp turns abound. Approach to certain districts is difficult because of the haphazardness of street arrangement. And in addition to these specific shortcomings it is found that a rigid adherence to the rectangular method of platting has produced many unnecessarily steep grades and has thrown upon the city severe and unwarranted grading expenses.

Des Moines has begun to feel the handicaps of a haphazard street arrangement. Within the last few years the city has undertaken an enormous amount of remedial street work. These are all corrections,—costly changes of existing conditions. They impose upon the city a heavy financial burden which might have been avoided by forethought. A complete statement of street changes made in recent years is included here to show what it has cost Des Moines to grow without a city plan. (See Frontispiece.) It should be remembered that these corrections are only those made in streets. The full charge against the city for its lack of foresight in all matters, such as park development, purchase of school and public building sites, and the like cannot be computed.

Eliminating grading charges, bridge costs and assessments for paving it is found that the seven-year record of street changes has involved an expenditure of \$1,992,395, all of which has fallen upon the property owners and taxpayers of Des Moines. This financial statement alone should be sufficient to enlist hearty support for a program that will effectively reduce the number of improprieties and mistakes committed in the laying out of streets. Such is the purpose of this phase of the city plan.

Since 1916 the city of Des Moines has carried out a long list of street improvements, all of which involved changes in the original layout of streets. The complete list of these changes is found on the following pages.

Des Moines

Corrective Street Improvements Since 1916

Costs

	Character of Improvements	Old Width	New Width	Property	Incidental	Total	How Paid
KEOSAUQUA WAY (1922)			110'	\$800,499	\$ 53,200	\$853,699	BD
Eighth and Chestnut to Nineteenth and Carpenter	O						
Fifth to Eighth	W						
Fifth to Seventh		66'					
Seventh to Eighth		55'					
FIFTH STREET							
Chestnut to School (1920)	W	66'	80'	501,448	126,680	628,128	BD
Grand to Chestnut (1917)	O		80'	63,544		63,544	BD
UNIVERSITY AVENUE (1921)							
East Ninth to West Sixth	W		91'	130,824	3,246	146,007	BD
West Sixth to West Fourth		25'					
West Fourth to River		66'					
River to Pine Street		41'					
Pine to Penn Avenue		35'					
Penn Avenue to East Eighth		45'					
East Eighth to East Ninth		40'					
THIRTY-FOURTH (1920)							
Clark to Franklin	W	50'	60'				
FRANKLIN (1920)							
Thirty-fourth to Thirty-eighth	W	50'	60'	52,787		52,787	BD
Thirty-eighth to Forty-first	W	25'	60'				
PARK AVENUE (1921)							
Southwest Ninth to Fourteenth	W			22,039	6,781	28,821	BD
Southwest Ninth to Union		33'	50'				
Union to East Fifth		33'	58'				
East Fifth to East Fourteenth		33'	50'				
Southeast Fourteenth to Twenty-second (1920)	O		50'	2,021	5,691	7,712	BD
WEST THIRTEENTH (1919)	O		66	23,816	200	24,016	
Grand to High							
INDIANOLA (1921)							
Courtland to Hartford	W	66'	80'	19,786	3,425	23,212	BD
Southeast of Southeast Sixth	O		66'				
URBANDALE (1920)							
Leado Avenue to Merle Hay Road				7,467	14,927	22,393	20% City 80% BD
Leado to Forty-seventh, each side of right-of-way	O		25'				
Forty-seventh to Merle Hay, north side of right-of-way							
Forty-seventh to Forty-ninth	O		50'				
Forty-ninth to Fiftieth	O		25'				
Fiftieth to Merle Hay, south side of right-of-way	O		50'				
Forty-seventh to Fiftieth	O		25'				
Fiftieth to Fifty-fourth	O		65'				
Fifty-fourth to Merle Hay	O		50'				
AVENUE FREDERICK HUBBELL							
Eighteenth to Douglas	O		70'				
Douglas to City Limits	O		66'	16,140	1,967	18,107	BD
SOUTHWEST EIGHTH (1921)							
Bell to South City Limits				14,746	2,847	17,593	BD
Bell to point 650' south	W	50'	70'				
650' south to City Limits	O		70'				
WEST SIXTEENTH STREET (1919)	O		66'	15,664		15,664	BD
Linden to Alley South							
THIRTY-EIGHTH STREET (1920)							
Beaver to 300' north	O		50'				
300' north to Douglas	W	25'	50'	8,053	6,344	14,397	
WASHINGTON	O		50'				
Thirty-eighth to Beaver							
HULL AND OTHER STREETS (1918)							
HULL	W		50'	10,377	3,345	13,723	BD
Second to Oxford		40'					
Oxford to Bowdoin		25'					
Bowdoin to North Union		40'					
CORNELL							
Sheridan to Hull	W	25'	50'				
BOWDOIN							
Sheridan to Hull	W	25'	50'				

		Costs					
	Character of Improvements	Old Width	New Width	Property	Incidental	Total	How Paid
NORTH UNION							
Arthur to Hull.....	W	25'	50'				
GRANDVIEW							
North Union to Bowdoin.....	O		50'				
SHERIDAN							
Bowdoin to North Union.....	O		50'				
SHERIDAN							
Bowdoin to Cornell.....	W	33'	50'				
Cornell to Oxford.....	W	33'	66'				
VANDALIA ROAD.....	O		66'	6,209	2,636	8,845	BD
East Thirtieth and C., B. & Q. R. R. to section line between Section 18 and Section 7 (along north side of R. R.)							
HARWOOD							
Forty-fifth to Polk (1917).....	W	12.5'	50'	2,587	51.27	2,638	BD
Polk to Forty-ninth (1921).....	O		50'	6,100	463.55	6,563	BD
EUCLID (1919).....	O		80'	5,237	560.19	5,797	BD
North Union to East Fourteenth							
FORTY-SEVENTH (1918).....	O		50'	4,892	453.35	5,345	BD
University to Forest							
EAST TWENTY-FIRST (1917).....	O		50'	5,067	152.27	5,219	80% BD 20% C
Grand to Alley South.....							
THIRTY-NINTH STREET (1921).....	O		50'	3,827	358.00	4,185	BD
Woodland to Pleasant							
SCHOOL (1920).....	W	30'	60'	3,644		3,644	70% BD 30% C
Twenty-third Street Place to Twenty-fourth							
SCHOOL (1920).....	W	45'	60'	2,355	103.81	2,458	
Thirty-first to point 202' west							
EAST WASHINGTON (1920).....	O		50'	3,165	273.51	3,438	BD
East Twenty-ninth to East Thirty-third							
ELIZABETH.....	O		50'	2,911	171.42	3,082	20% C 80% BD
Avenue Frederick Hubbell to East Twenty-fourth							
GUTHRIE (1919).....	O		60'	1,910	55.35	1,965	BD
Avenue Frederick Hubbell to East Twenty-ninth.....							
YORK (1918).....	O		50'	1,531		1,531	BD
Hull to Nevada							
PLAIN VIEW DRIVE.....	W	16'	40'	1,254	135.96	1,390	BD
Fortieth Street to point 276' west							
MAPLE (1921).....	O		50'	1,140	216.54	1,356	BD
Twenty-seventh to point 425' west							
Twenty-sixth Street Court, Maple to 161' north							
HARTFORD AVENUE (1920).....	O		50'	1,001	145.18	1,146	BD
Southwest First to South Union							
LYNN (1919).....	W	30'	40'				
Sixteenth to Seventeenth							
SEVENTEENTH.....	W	33'	50'				
University to alley north				745	312.88	1,058	BD
SIXTEENTH.....	W	44'	58'				
Lynn to Carpenter							
EAST ELEVENTH STREET (1921).....	W	20'	50'	970	40.50	1,010	BD
Guthrie to point 470' north							
COLLEGE (1918).....	W	25'	50'	850	18.50	968	BD
Nineteenth to Twentieth							
NORTH UNION (1918).....	W	25'	50'	925	39.70	964	BD
Guthrie to Wisconsin							
WEST GRAND (1911-17).....	W	66'	80'	Voluntary dedication by property owners			
River to Eighteenth							
GARDEN AVENUE (1920).....	O		40'	No cost			
Eleventh to Twelfth							

Note—In the table above the cost figures include everything except bridge construction, grading and paving; the abbreviations are as follows: O—Opening, W—Widening, BD—Benefit District, C—City at Large.

Des Moines in 1857

Here is reproduced one of the first complete maps of early Des Moines. It shows clearly the topographic characteristics of the original site of the city. It also shows a number of peculiarities in the original street system which are of interest today. Cherry, Mulberry and Walnut Streets ran west until they met a small water course known as Spring Brook. Locust Street throughout its entire length was occupied by a railroad and was stopped west of Twelfth Street by a reservation of several blocks for a railroad depot. Sycamore Street, which is now Grand Avenue, was the north limits of the community. Beyond that were open fields, the upland areas being covered with trees. As shown in this early plan, the elevated ground north of the city took the form of high plateaus, cut here and there by deep ravines. The valley through which Keosauqua Way runs is plainly shown, as is also another valley approximately on the line of Seventh Street.

One is led to wonder what sort of a city Des Moines might be today if this early layout of streets had been extended according to the principles of modern city planning. The steep slopes would have been avoided in such cases, as they were eventually on Keosauqua Way. Main arteries would have radiated from the level original town like the spokes of a wheel. Around this central nucleus, probably at the foot of the slopes, would have run a wide circumferential traffic way. This commodious street would completely surround what is now the business district. Southward toward the river there would have been thoroughfares laid out primarily for industrial use. The low swampy character of the land would have suggested such future use.

It is futile at this time, however, to dwell at length on what might have been. Des Moines has grown up in a different way. Yet today, as far as further growth is concerned, Des Moines is but slightly different from what it was in 1857. It is growing more rapidly and is expanding over a greater area. Moreover, it is spreading over a terrain in many respects more unfavorable than that which was encountered in 1857. In essential respects, however, the problems of deciding as to the best future uses of property, how and where to run the lines of new streets and the like are the same as in the days of the city's youth. From the standpoint of making Des Moines a more orderly city and one arranged in such a way as to offer the largest advantage to those who live in it, the present opportunities surpass those of the period of the map opposite. It is a mistake to view the city as a finished creation. Growth is certain to continue and the problems attendant upon this growth will multiply. It is highly necessary now that the city itself anticipate these problems and plan its growth as if it were at the beginning of its career.

Boundary Changes

The map opposite illustrates the successive changes that have been made in the boundary of Des Moines. The city has always favored a large corporate area. In 1857 when the population of the city was between three and four thousand, the city limits were extended to include eight and three-fourths square miles. Outside the boundaries thus established, several small incorporated communities in time developed.

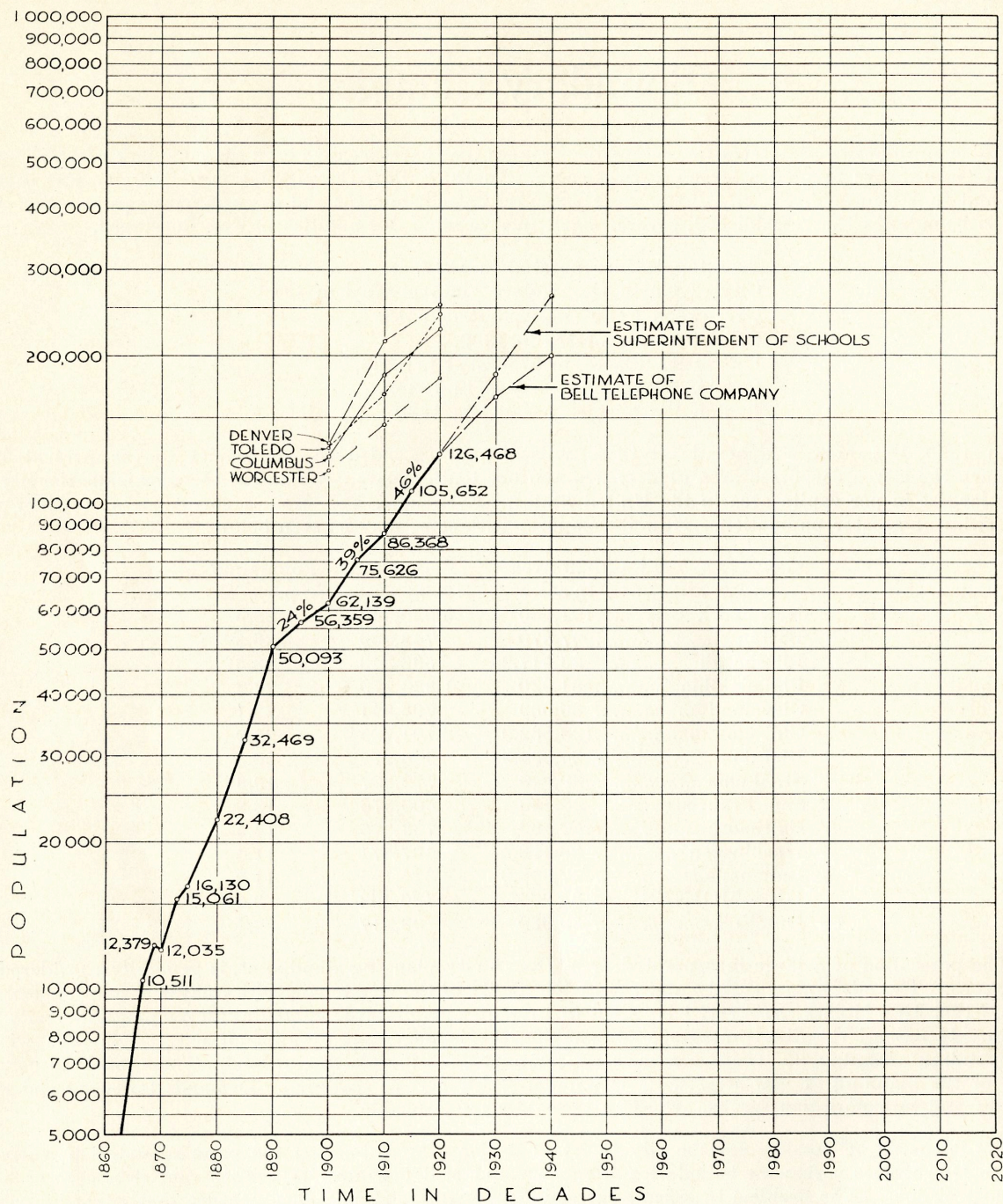
Sevastopol—incorporated in 1877.
City of North Des Moines—incorporated in 1880.
Greenwood Park—incorporated in 1881.
Gilbert—incorporated in 1882.
University Place—incorporated in 1883.
Capitol Park—incorporated in 1884.
Easton Place—incorporated in 1889.

In 1890 Des Moines annexed all these villages and extended its boundaries to the present lines. This gave the city a corporate area of fifty-five and one-tenth square miles and at the time made the city one of the largest in per capita area in the United States. Even now, Des Moines covers more territory than many cities of greater population. How it compares with some may be seen below:

	1920 Area in acres	Population 1920 Census	Population per acre
New York City.....	191,360	5,620,048	29.3
Boston	27,870	748,060	26.8
Pittsburgh	25,517.2	588,343	23.5
Philadelphia	81,920	1,823,779	22.2
Cleveland	36,089	796,841	22.1
Chicago	123,382.9	2,701,705	21.9
Buffalo	24,894.3	506,775	20.3
St. Louis	39,040	772,897	19.8
San Francisco	26,880	506,676	18.8
Baltimore	50,560	733,826	14.5
Washington	38,408.4	437,571	11.4
Indianapolis	27,893.9	314,195	11.2
DES MOINES.....	35,264	126,468	3.6
Duluth	39,680	98,917	2.4

The possession of a large incorporated area, from a city planning standpoint, is generally considered advantageous. The advantage usually appears in the ability of the city to control its physical development. It appears that Des Moines, however, has failed to prevent a haphazard, sprawling development over its vast domain. It has all the disadvantages accompanying the management of an enormous urban area without corresponding advantages. There has been no restraint upon the platting of land. There has been no regulation of the planning of new streets. The population has become scattered. Demands for sewer and water facilities and transportation service are often extremely unreasonable.

Yet it should be possible for the city to retain its large area, to keep the population which really belongs to Des Moines within the boundaries of the city and still organize its growth and development along more logical lines. The problem is difficult but calls loudly for solution. One measure that might be tried in an endeavor to keep development within reasonable limits would be to require all subdividers to grade and pave streets and install sewer and water facilities before placing property upon the market. Another device which might be used to accomplish practically the same purpose would be the adoption of a new assessment schedule imposing heavier taxes upon subdivided but unimproved property, thus lightening the burden upon acreage within the city limits. Supplementing these, there should also be ordinances requiring the submission of all subdivision plans to a City Planning Commission.



CITY PLAN
COMMISSION
1 9 2 4

POPULATION GROWTH DES MOINES - IOWA

HARLAND BARTHOLOMEW
CITY PLAN ENGINEER
SAINT LOUIS

Population Growth Curves

Unlike many cities, the population of Des Moines is practically all within its own boundaries. Its growth since 1890, therefore, represents the normal yearly increase unaffected by annexation of neighboring communities. Considered in this light, the rate of population growth in Des Moines has been truly remarkable. The city grew 39% between 1900 and 1910 and 46% in the last decade.

If this rate of growth continues, and there is no reason to doubt that it will, Des Moines will have a population of over 250,000 in 1940. This is the population prediction upon which future school needs are being determined. The reasonableness of this forecast may be judged to a certain degree by an examination of the population records of four cities that in 1900 had a population approximating that of Des Moines in 1920. The curves opposite show that in the twenty years which followed 1900, these cities grew at about the rate which has characterized the growth of Des Moines in the past twenty years.

Population prediction, however, is more or less meaningless unless it is translated in terms of physical urban development. Des Moines may expect a population approximating 175,000 in 1930. This represents an increase of 50,000 over the population of 1920.

Expressed in a different way, it means a new city practically the size of Cedar Rapids or Davenport built on the outskirts of Des Moines today. It means, perhaps, the platting of five square miles of new territory, the opening of one hundred miles of new streets, the extension of several street car lines, the erection of five or six new elementary schools.

It means, also, the further extension of all public utilities, electric light, telephone and water service. Those who are responsible for the management of these interests as a matter of policy make frequent studies of population trends and try to be prepared at all times for the inevitable growth and increased demand which they know will arise in one place or another. The sort of anticipatory planning which is being done by the engineers of the telephone company, the water company and the electric company should be duplicated and carried even further by the municipality itself. New streets, new parks, new transit lines, new industrial districts, all matters of this sort should be constantly under study. This report emphasizes merely the need of farsighted street planning.

DES MOINES I O W A DISTRIBUTION OF NEW HOMES

DWELLINGS ERECTED IN FIVE YEAR PERIOD
APRIL 1919 TO APRIL 1924
ZONING COMMISSION
HARLAND BARTHOLOMEW-CITY PLANNING ENGINEER
SAINT LOUIS - MISSOURI

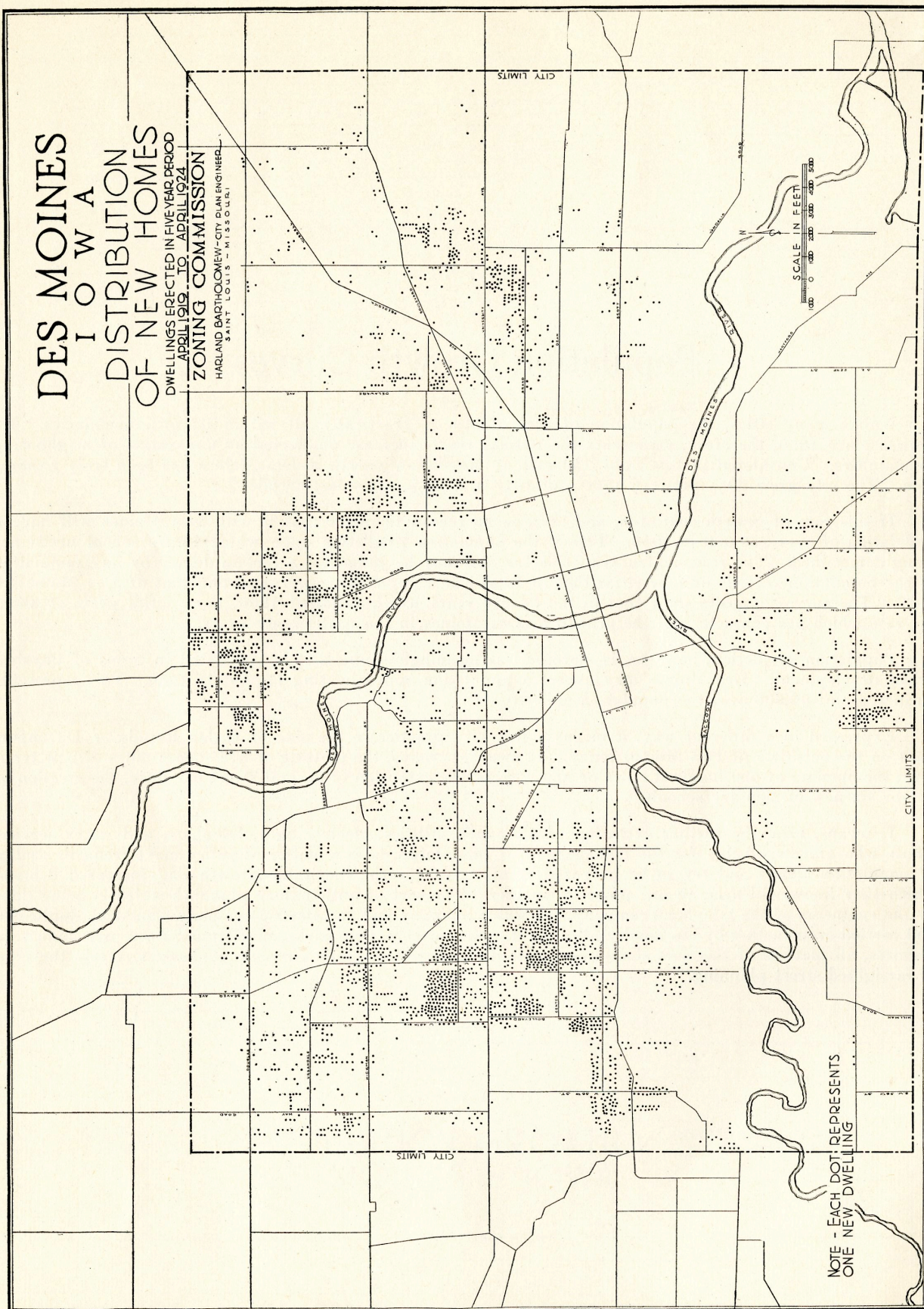


PLATE No. 4

Distribution of New Homes

The preceding plate dealt with numerical population changes. The one opposite is an indication of the trend of residential development resulting from the population increases of the past five years. It shows graphically the location of new homes built since 1919.

The western section of the city has been the most popular, the south side the least. Quite a noticeable distribution of new dwellings appears north of the river. On the east side they are fewer and more scattered.

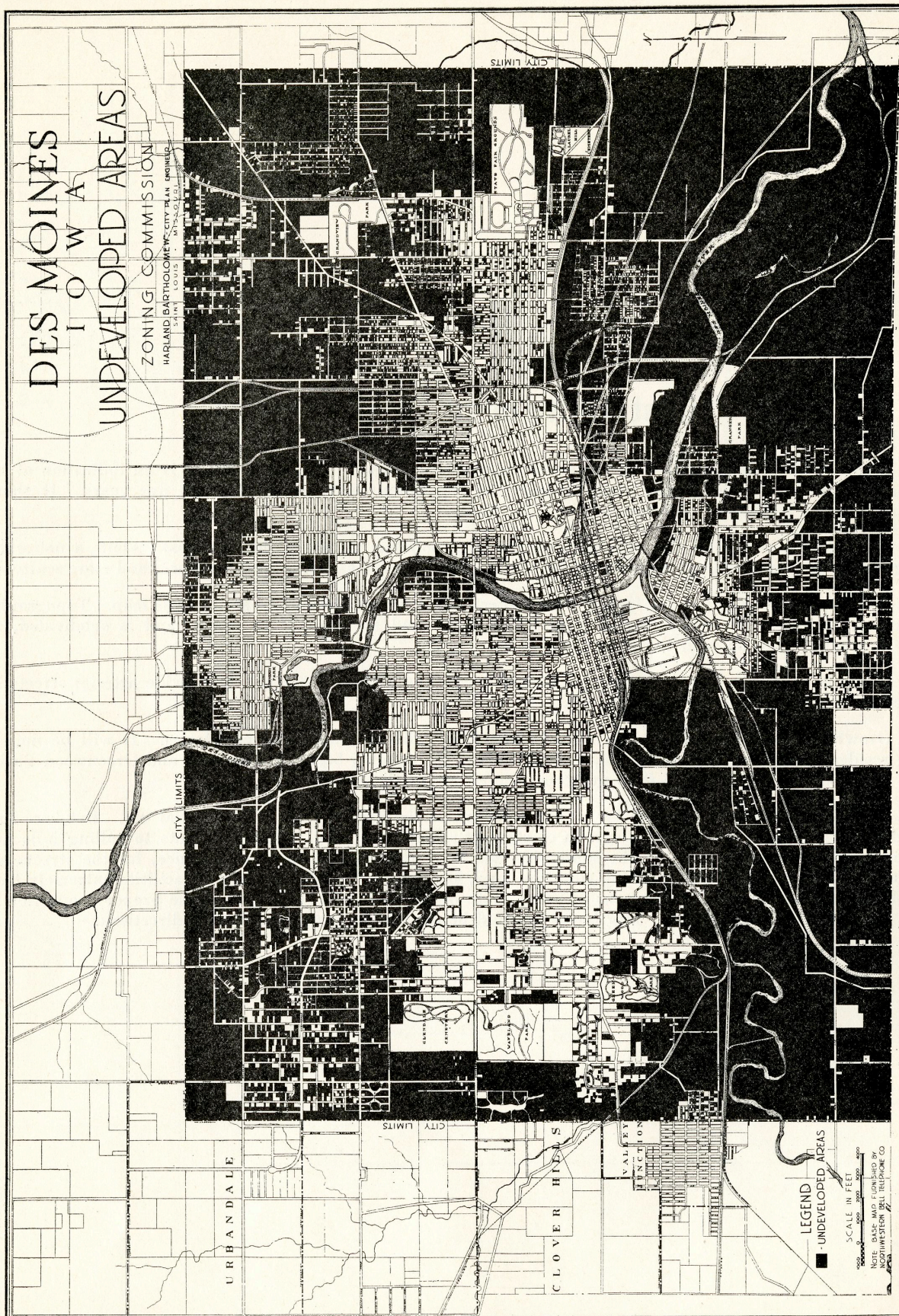
The influence of the various factors which affect city development may be seen in this map. Topography, street car facilities, the availability of good traffic routes and the manner in which land is subdivided, all have a great deal to do with the upbuilding of any section.

There is no bar to further growth northward except the ability of the city to provide arterial streets by which these districts may be easily reached.

Growth to the west, however, is already interfered with by parks and cemeteries. It will be noticed that residential development is now squeezing through the opening between Waveland and Greenwood Parks. The city has a problem before it to overcome the effects of these barriers.

South of the river the general lay of the land invites the highest type of residential use. But here subdividers have attempted to apply a system of straight streets and small rectangular lots to rolling hills and deep valleys. The settlement of the south side has been handicapped as a consequence, for the streets are often too steep to be passable, grading costs are high, lots are unattractive and sewer facilities extremely hard to plan. A proper street arrangement in areas south of the river will in time draw the proper proportion of new dwellings into this section. Des Moines should be planned to grow evenly in all directions.

ZONING COMMISSION
HARLAND BARTHOLOMEW CITY PLAN ENGINEER



[20]

Undeveloped Areas

This map affords a rather uncommon view of Des Moines. Few realize the large proportion of city area that remains unused. It is estimated that nearly two-thirds of the fifty-five square miles of land in the incorporated city is still vacant. This is undoubtedly a burden upon the municipality for which there should be certain compensations. All these, however, Des Moines has not yet secured.

The lack of a measure of control over city development has tended to introduce peculiarities into the growth of the city. Note the shape of the built-up districts, the tendency to form a cross. Note also the "blockades" east and west in the form of parks, Fair Grounds and cemeteries and how the city has grown toward the northern city line. The absence of diagonal streets has held back growth northeast and southwest. The new Avenue Frederick Hubbell, however, has already begun to influence growth northeast, but the southwest still misses such a short-cut artery.

Southeast there is a conflict with railroads and low areas along the river. The building up of this section depends considerably upon the opening of new trafficways. The southwest undeveloped river bottom areas are perhaps the least favorable of all for city use. They will always be difficult to reach, not suitable for residence because of the river, and of limited value for industry because of the requirements of the municipal water department.

The new Keosauqua Way will have an obvious influence upon the northwest section, but this district badly needs an extension of Beaver Avenue for its proper development. The manner in which a diagonal artery stimulates property use may easily be seen at a glance at the development along Indianola Avenue. It will only be a matter of a few years until the influences of Avenue Frederick Hubbell will begin to show.

SCALE OF MILES
1 1/4 1/2 1 2 3

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CITY PLAN ENGINEER
SAINT LOUIS - MISSOURI

NOTE - BASE MAP OF DOLK COUNTY
FURNISHED BY THE COUNTY ENGINEER

[22]

PLATE No. 6

Regional Map

From the standpoint of city planning it is often difficult to determine just what constitutes the city. In preceding plates two manifestations of Des Moines have already been indicated, one marked by the legal boundaries and the other the built-up physical city occupying the center of the corporate area. Des Moines, actually, however, is neither of these two. It is a community of greater extent, the outlines of which cannot definitely be fixed. Topographic and economic lines as well as the arbitrary present-day boundaries must be considered in planning the Des Moines of the future.

The modern motor car has greatly extended the area subject to urban influences. The agricultural region within thirty miles of Des Moines is economically a part of the city. Those who live on farms no farther away than that are almost as close to the business district in point of time as many who live within the city limits. South Fort Des Moines, Valley Junction, Urbandale, Bondurant, all such outlying communities are functionally Des Moines now. A study of the growth of this urban region must include these communities and others beyond, for it is only a matter of a few years until they will be practically indistinguishable in the greater city.

There is a constant tendency even now to unify the territory around Des Moines. The railroads tend to tie communities together, as do interurban railways and bus lines. The county highways join the street systems of apparently distant settlements, creating thereby a regional circulation system. Water supply, power, lights, sewer facilities, schools, all disregard arbitrary boundaries. An extended argument is not required to justify plans for the improvement of the entire Des Moines region. The aim of the Des Moines major street plan will be to indicate the general lines of the principal thoroughfares which should be established to insure an orderly, balanced urban growth throughout the entire district.

DES MOINES I O W A TOPOGRAPHIC CHARACTERISTICS OF THE SITE

ZONING COMMISSION
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CITY PLAN ENGINEER
SAINT LOUIS-MISSOURI

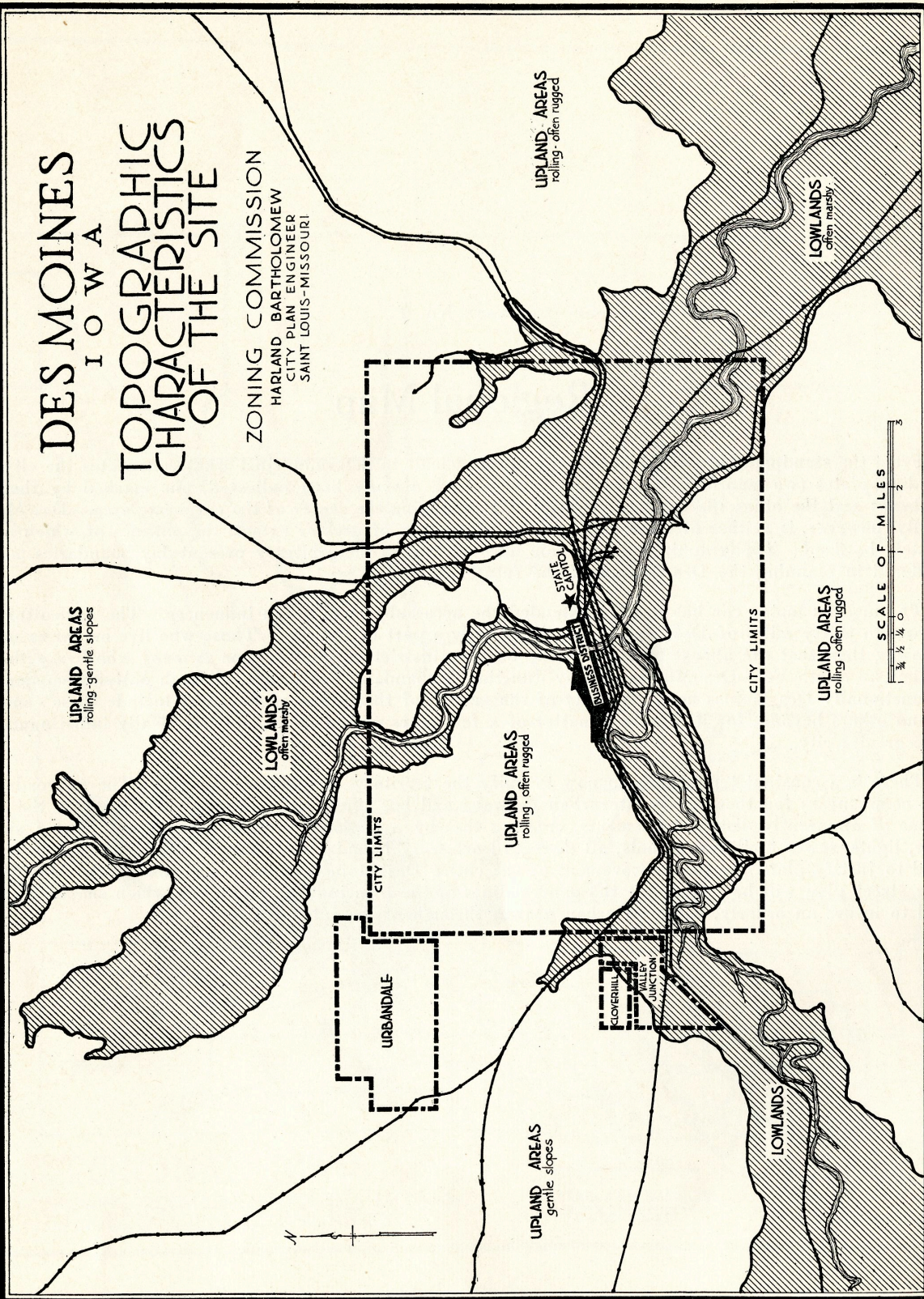


PLATE No. 7

Topographic Characteristics of the Site

This map indicates broadly the dominant features of the terrain upon which Des Moines is growing. So far there has been little conscious effort to adapt the structure of the city to the conditions here shown. The railroads have utilized the level valleys, the capitol was set upon a commanding hill top and certain rugged areas have been set aside as parks. Aside from these few adjustments, the layout of the city of Des Moines scarcely recognizes the varied contour of its site.

Certain considerations suggested by this study may be listed.

1. A determination of the most logical uses of land is a prerequisite of effective planning. Generally speaking, lowland areas are best used for industry, fairly level land for residences, and rugged areas for parks, institutions and an open type of residential development. Streets, street car lines, school sites and commercial centers cannot be properly arranged without a broad consideration of these uses.

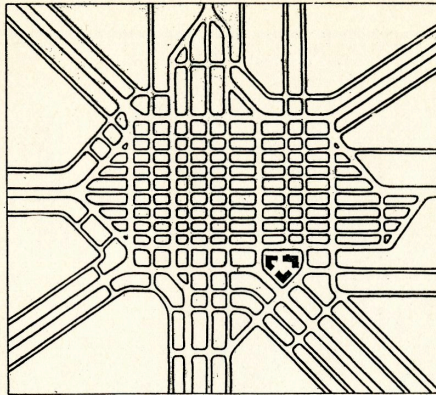
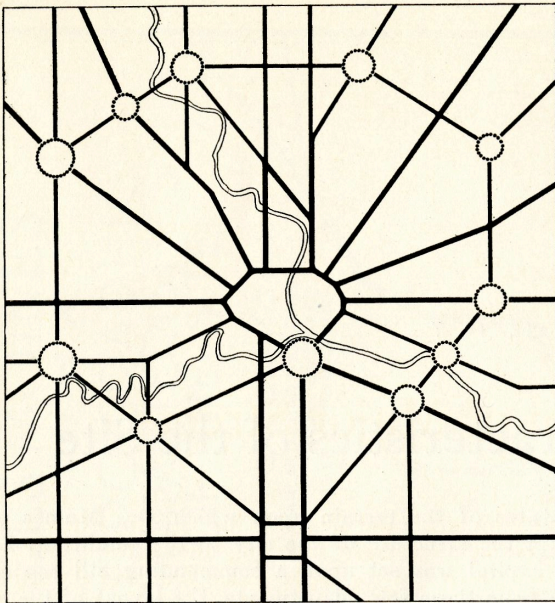
2. There should be as great as possible a restriction upon attempts to develop strongly marked industrial areas for residence uses. To counteract such tendencies the city should make special effort to direct attention to areas that are obviously more suitable for homes. The proper extension of streets and car lines, the reservation of park lands and school sites and similar expedients should be used to induce settlement in these districts.

3. The placement of streets in industrial districts should be determined by railroads and the needs of industries. As a rule a major street should parallel every railroad line from 300 to 500 feet away and cross streets should be reduced to a minimum.

4. In upland residential areas topography and the type of dwelling expected should determine the general street and lot arrangement.

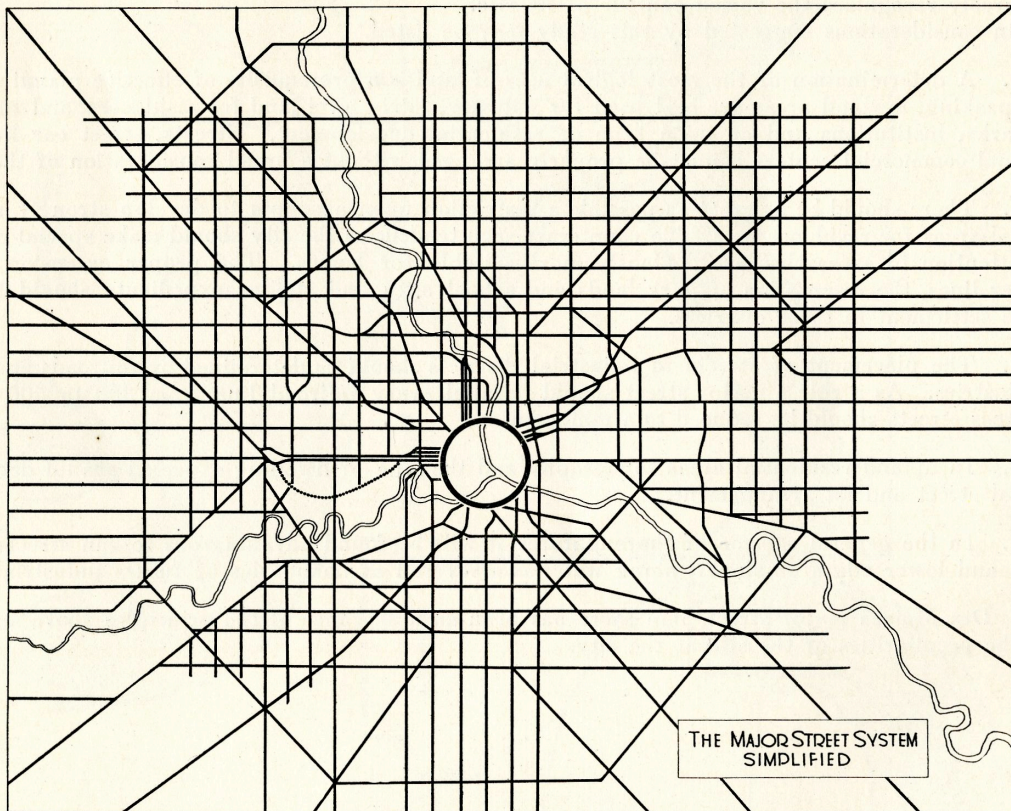
5. In the general scheme of thoroughfares it will be found advantageous to run streets along the upper and lower edges of slopes, along water courses and as boundaries of future industrial areas.

In the Des Moines major street plan there has been an observance of the principles above and a recognition of the peculiarities of the site of the city.



ABOVE IS SHOWN A THEORETICAL BUSINESS DISTRICT
COMPOSED OF SQUARE BLOCKS - THE APPROACH
STREETS ARRANGED TO DISTRIBUTE TRAFFIC
EQUALLY THROUGH THE AREA

TO THE LEFT IS SHOWN A DIAGRAMMATIC ARRANGEMENT
OF RADIAL ARTERIES CONNECTING IMPORTANT
CENTERS



THE MAJOR STREET SYSTEM
SIMPLIFIED

DIAGRAM ILLUSTRATING THE COMPOSITION OF A MAJOR STREET SYSTEM

HARLAND BARTHOLOMEW
CITY PLAN ENGINEER
SAINT LOUIS MISSOURI

Theory Diagram of Major Streets

The streets of the modern city carry an increasing volume of traffic. Bicycles, street cars, busses, fast and slow and standing vehicles, pleasure cars, trucks with light and heavy loads, all are often found using the same street at once. Some of these are on local errands, some are traveling across town and others are merely passing through the city on tour. It is the complexity of the daily traffic flow and its economic significance that contribute to the seriousness of street planning problems. Conditions have developed that require a more systematic and orderly classification and arrangement of city streets.

It is obvious to any one who uses the streets of Des Moines or observes the daily movement of vehicles upon them, that some are more useful and important than others from a community standpoint. The streets that might be said to belong to the city at large are the *major streets*. The streets that serve only local needs are minor streets. So far as traffic circulation is concerned, the problems of the minor street are relatively few. The major streets, however, because they attract the larger, more vital share of the vehicular flow, present problems of width, arrangement, surface improvement, lighting, traffic regulation and general management. Des Moines has not heretofore undertaken to make a special study of these major street problems.

As a first step in making major streets more efficient as community traffic carriers, it is necessary to classify them as

1. Principal radial thoroughfares—the streets which lead directly to important centers.
2. Crosstown thoroughfares—the streets which provide for direct movement east and west, and north and south.
3. By-pass streets—routes around congested areas.

Streets of all the types noted above should be so arranged as to form a system. The principal radial thoroughfares should afford easy access to the central business district, to industrial sections and to smaller surrounding communities. The crosstown thoroughfares should form a fairly regular rectangular pattern over the area of the city. Generally these streets should be spaced about one-half mile apart. By-pass streets should be so connected with the principal radials that traffic which has no business in a district of congestion or confusion may find an easy route around it. The plate opposite illustrates the theoretical composition of such a scheme of streets.

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Existing Diagonal Streets

The method of land surveying which is followed in this country induces the platting of rectangular streets. The greater portion of the streets of Des Moines have been laid out in this manner, following lines dictated by property boundaries rather than natural grades or the requirements of circulation. The effect of this predominantly rectangular street system upon the development of the city may be studied in a previous plate, Number 5. The districts which have built up most rapidly are those along streets which lead directly to the business center. The northeast, southeast, southwest and northwest quarters until recently have had no direct arterial connections with the center of the city and as a consequence remain largely undeveloped.

The opening of diagonal streets into these quarters is the most effective way of encouraging their development. Keosauqua Way and Avenue Frederick Hubbell will render this service. Indianola Avenue has a similar function. These thoroughfares all deserve more than ordinary attention. The service they render increases rapidly as the city expands. Because of the volume of traffic which they attract, the maximum frontage upon them must be made available, cross streets reduced to the minimum and intersections studied as a special problem. Diagonal streets are featured in the major street plan and an effort is made to show how they may be properly coordinated with the rectangular system of crosstown thoroughfares and minor streets tributary to them.

Des Moines will find it difficult to realize the full value of its existing diagonal streets because the numerous intersecting streets reduce and spoil the frontage upon them. There is scarcely a lot to be found upon the new Keosauqua Way that is shaped properly for business purposes. This has resulted obviously from the late introduction of such a street into a rectangular street system. If the city had possessed the power of excess condemnation, it might have reduced the cost of this project materially and left the frontage in better condition for business purposes. (See Appendix B.) The most satisfactory and economical way is to have them platted where needed in new subdivisions. There is no particular objection to diagonal streets from the standpoint of real estate sales provided the subdivider knows how to introduce them successfully into the general scheme of other streets.

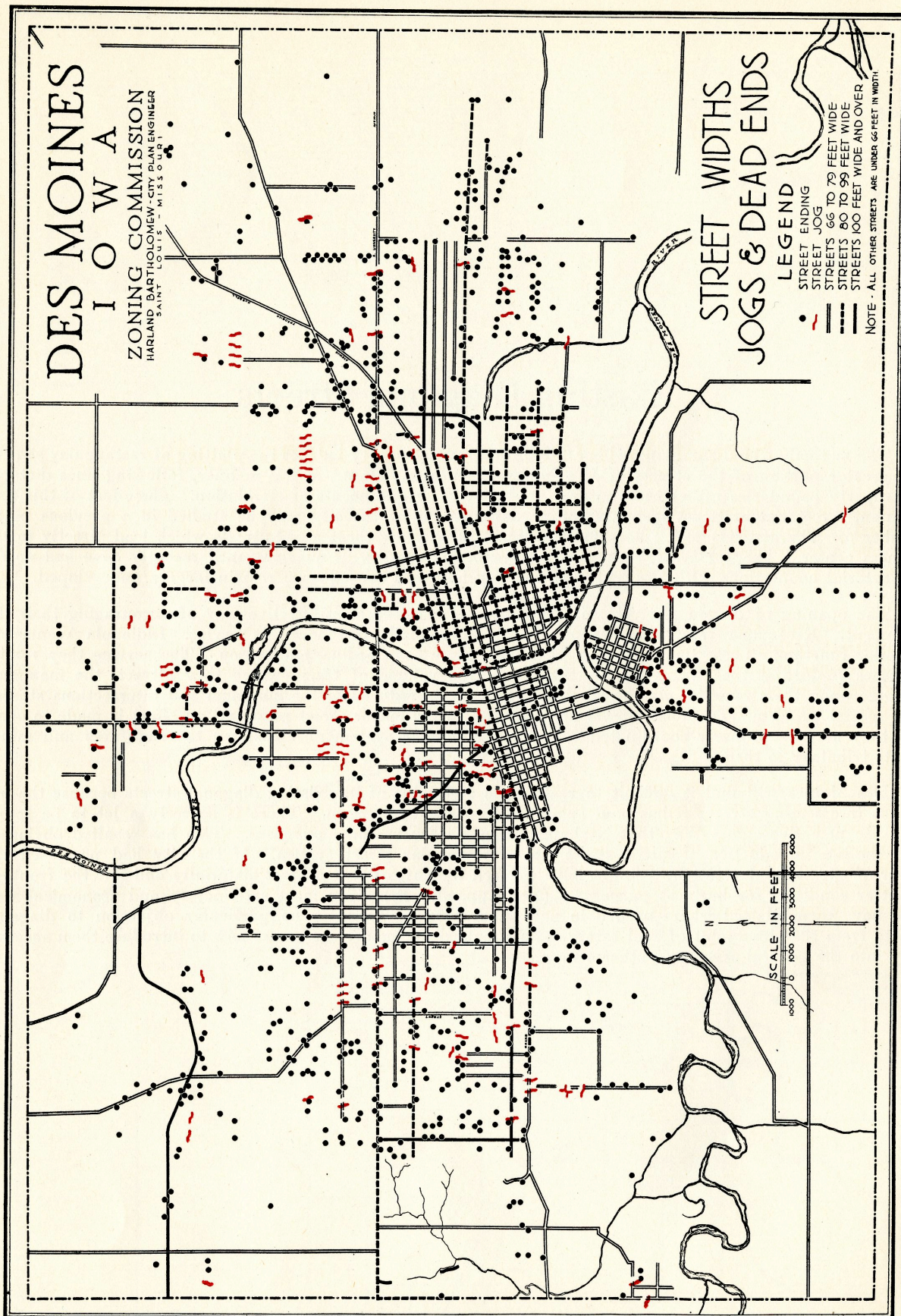


PLATE No. 10

Street Widths, Jogs and Dead Ends

In the days of horse-drawn vehicles it did not greatly matter if streets were narrow and improperly connected. Today, however, every street that is narrow where it should be wide is both a source of economic waste and a traffic hazard. This is true also of jogs and dead ends in streets. They all hinder the free movement of vehicles. They cause a loss of time. In a word, they interfere with the circulation of the urban body.

Too few wide streets, an unsystematic distribution and placement of those that are wide, offsets and abrupt street endings are faults discovered in the traffic-ways serving Des Moines today. The plate opposite shows some of these shortcomings. They have developed because the city, heretofore, has not had much to say about how streets were laid out. Real estate promoters and developers since the earliest days have been free to lay out streets and lots according to their own ideas, as if the community at large had no interest in what they were doing.

Altogether the subdividers of land have thus far platted approximately 1100 "additions" in Des Moines. These operations in actuality are city planning. When the owner of an acreage tract cuts it up into lots and streets he is engaged in a small way in the highly important work of fixing the ultimate character of the city. What he does may be either an advantage or a disadvantage in later years. Under such circumstances it is entirely reasonable to urge that his activities be brought within the purview of municipal authorities. If Des Moines some time ago had appreciated the full significance of the operations of land subdividers it might have reduced the 1486 jogs and dead ends which appear in its streets and might also have made their widths more nearly proportionate to their importance.

DES MOINES I O W A BUSINESS DISTRICT DEVELOPMENT

ZONING COMMISSION
HARLAND BARTHOLOMEW - CITY PLANNING ENGINEER
SAINT LOUIS - MISSOURI

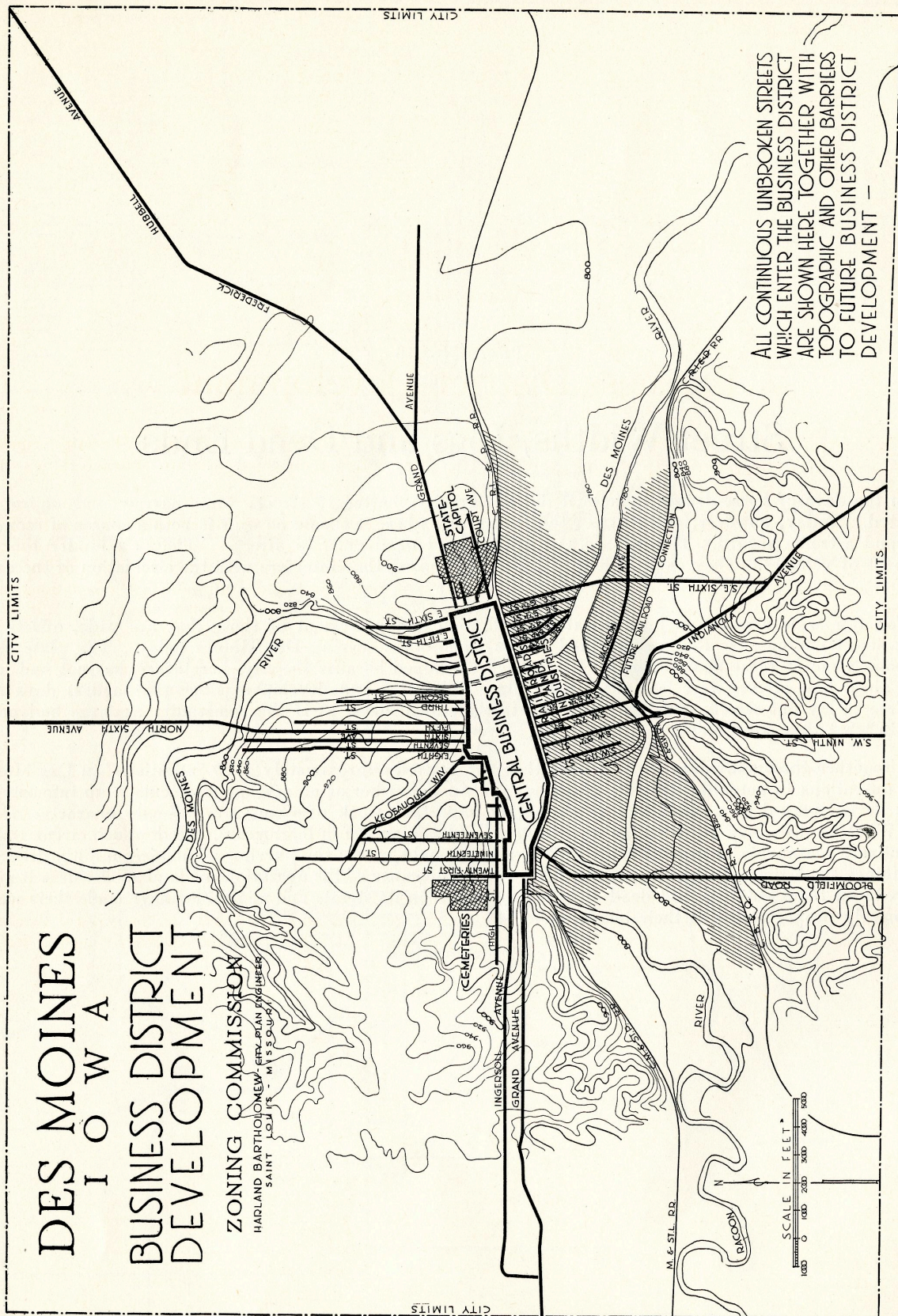


PLATE No. 11

Business District Development

The central business district is the heart of the city. Manifestly the heart should be healthy, functioning properly with the general circulation system. The plate referred to shows certain characteristics of the central business section of Des Moines.

The arteries which lead directly to the heart of the city without break or interruption are relatively few in number. Altogether forty-eight streets afford entry into the business district and of these only six reach the city limits and country beyond. Grand Avenue, Avenue Frederick Hubbell, which in effect is an extension of Grand, Sixth Avenue, Southwest Ninth, Southwest Twenty-first and Indianola are continuous radial arteries. Fortunately they are well distributed, but it is obvious that similar traffic channels should be developed to supplement them and to serve as direct approaches to other equally promising districts.

In many respects the section of the city lying immediately north of the center bears the most favorable relationship to it. Several parallel streets here function together. Fifth, Sixth, Seventh, and Eighth as far north as the river are equivalent to a single street of enormous width and great capacity. North of the river, however, there is but a single artery, Sixth Street, to carry this volume of traffic.

The chief obstacle to further business expansion northward is the elevation of the land. The lowering of the grade and the widening of Fifth Street was an improvement of incalculable value to the future city. This is the logical direction of future business growth as may be seen by reference to the map. Growth southward is blocked by railroads and industries, eastward the capitol grounds interfere, westward the development is forced into a shoe-string form along Grand and Ingersoll Avenues. In the major street plan which follows, many recommendations are made for the improvement of those streets related to the business center of the city. As long as this district is easily reached from all directions and circulation through it is not allowed to become sluggish, property values will be retained and there will be no general exodus of shops and stores to outlying sections. A few inexpensive major street improvements where needed will actually save the city millions of dollars.

Proposed Major Street System

This is a systematized arrangement of the streets having a city-wide or community importance. These are the thoroughfares which should and will if properly developed carry the major portion of the traffic flow in and through Des Moines.

As will be noted, existing streets form the basis of the major street system. To make these established trafficways more useful in carrying the increasing vehicular flow, it is recommended that some of them be widened and that certain short connections be opened here and there to tie them together as a system.

On the outskirts of the city, many extensions of existing streets are proposed. This phase of the major street plan calls for preventive or directive rather than remedial action. These new streets are to be secured by control of future land platting within and beyond the present city limits. Des Moines at present has adequate statutory authority to inaugurate street openings and widenings and has already had considerable experience in such operations. But it lacks the power to plan new growth and carry out such plans. This power must be secured from the state at the earliest opportunity.

The Des Moines major street plan will be of little value unless the municipality has a means of requiring observance of this and similar plans by land subdividers. The general form of the necessary legislation will be found in Appendices B and C. The actual street improvements proposed in the major street plan are too numerous to be reviewed fully here. (See Appendix A.) The more important needs, however, may be summarized as follows:

The completion of the Keosauqua Way is a primary need, to be accomplished by connecting Keosauqua Way with Twentieth north of Carpenter Avenue. Keosauqua Way if left in its present state is unfinished. It will cost an insignificant sum now to make it a continuous artery of great usefulness to Des Moines. Provision should be made also for the future widening of Twentieth Street. Keosauqua Way should be extended to Second Street downtown and a cut-off introduced which will carry Keosauqua Way traffic directly on to the Grand Avenue viaduct.

Cottage Grove and Beaver Avenue should also be developed as a continuous thoroughfare, a first-class radial highway running miles into the northwest quarter of the city, as Avenue Frederick Hubbell does in the northeast. No time should be lost in extending Beaver Avenue into Urbandale. Delays will make the extension more costly and more difficult. The need for such a street meanwhile will increase rapidly. An opportunity exists now to make a connection between Twenty-eighth and Thirtieth between Forest and University, which will serve to carry Beaver Avenue traffic more directly into Cottage Grove.

A new artery is seriously needed to the west. The failure of subdividers to provide for the proper continuation of Ingersoll Avenue was a mistake from a community standpoint. The city will have to do what should have been done and once could have been done inexpensively and the cost of this action will have to be borne by property owners. Every residential district no matter how restricted and high-class it is requires for its successful development certain arteries of approach. These arteries must have first consideration in subdivision plans. They cannot be obliterated or turned aside at will, as if their usefulness were ended once a certain restricted neighborhood is reached. These are community streets and it is not at all unreasonable to require that they be continued along proper lines wherever subdivisions are being laid out to make use of them.

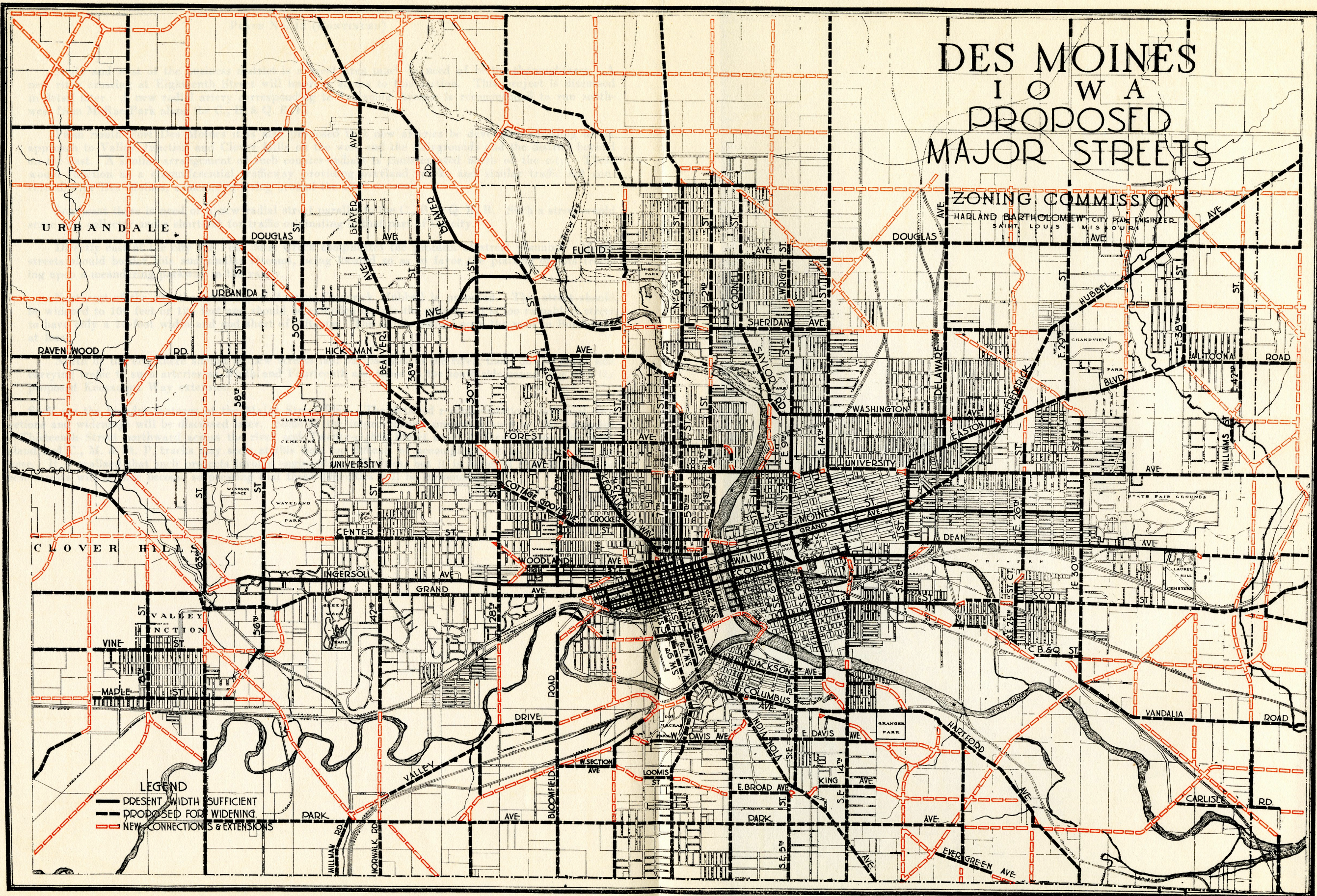
The growth of population west of the city makes the widening and extension of Center Street highly desirable, if not a positive necessity. This street should be projected diagonally in a southeast direction from Twenty-eighth Street to Woodland at Twenty-fourth. This improvement would tend materially to reduce the steadily increasing volume of traffic now thrown upon Grand and Ingersoll. Center Street should also be extended across the river to connect with Des Moines.

It would be advantageous also if a new continuous east and west route could be found through the residential districts south of Grand. A restricted pleasure drive, however, would draw a portion of the traffic from the major thoroughfares. The topography favors a pleasure drive and the service it would render in traffic relief is an additional argument in favor of its immediate development. The Town Planning Committee has long advocated such a project and a detailed study of circulation problems has proved its necessity.

DES MOINES IOWA PROPOSED MAJOR STREETS

ZONING COMMISSION

HARLAND BARTHOLOMEW CITY PLANNING ENGINEER
SAINT LOUIS MISSOURI



Present and Proposed Capacities of Major Streets

In the preceding plate attention was directed to the general problem of arranging certain existing streets to form a system of heavy traffic thoroughfares. This major street plan, however, did not tell a complete story about existing streets. It failed to show how unsystematic in width they are.

The width of a street used by modern traffic means little if it is expressed only in fact. This is especially true of major streets. Their importance to the community is determined largely by the number of lines of vehicles they will carry. When analyzed in such terms, it is found that numerous changes will have to be made in the widths of old streets to give them a systematized traffic carrying ability.

In Section A of the plate opposite, the present capacities of streets designated to form the major street system are shown. In Section B the capacities required for proper service in the system are shown. The complete record of widths and capacities of these streets, both existing and proposed, and the various connections needed to tie them together as a system will be found in Appendix A.

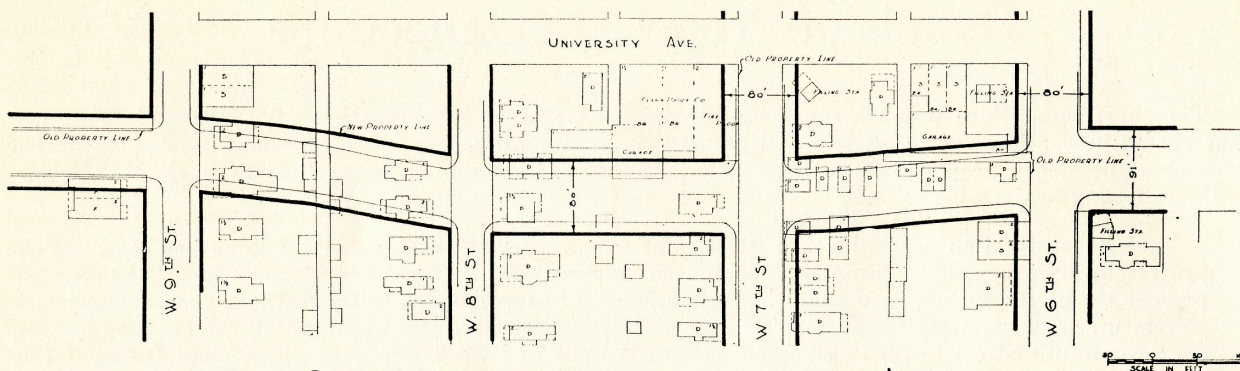
Briefly the more immediate needs are for the widening of the following streets.

EXISTING AND PROPOSED TRAFFIC CAPACITIES

Street	Present Capacity	Proposed Capacity
CHESTNUT		
From Fifth to Second.....	4	6
WOODLAND		
From Tenth to Twenty-ninth.....	3 and 4	6
GRAND		
From Forty-second to city limits.....	4	6
SOUTHWEST TWENTY-FIRST		
From river south	4	6
SOUTHWEST NINTH		
From Cherry to river.....	4	6
SOUTHWEST SEVENTH		
From Cherry to river.....	4	6
NORTH FIFTH		
From School to College.....	3 and 4	6
NORTH SIXTH		
From School to river.....	4	6
From river north	4	8
NORTH SEVENTH		
From Keosauqua to Prospect Boulevard.....	3 and 4	6
CROCKER		
From Keosauqua to Cottage Grove.....	4	8
COTTAGE GROVE		
From Crocker to Twenty-eighth.....	4	8
FOREST		
From Twentieth to Thirtieth.....	4	6
From Thirtieth to Beaver.....	4	8
TWENTIETH		
From Carpenter to Clark	4	6
From Clark north.....	3	6
INDIANOLA		
From Hillside south.....	4	6
PARK		
Throughout	4	6
UNIVERSITY		
From Fifth to Thirty-first.....	3 and 4	6
From York east	4 and 6	6
EAST FOURTEENTH		
Throughout	3, 4, and 6	6

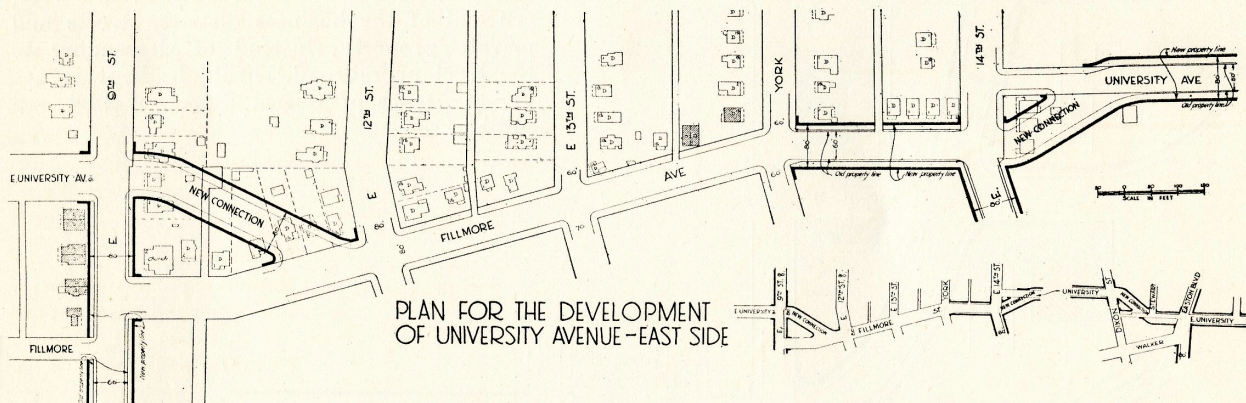
On many of these streets it may be possible to secure voluntary dedication of the width needed. On others it will be advisable to establish new street lines, the city taking title to the land needed and assessing the cost against property benefited.

It must be understood that an immediate undertaking of all this work is not contemplated. Des Moines in later years will need many miles of wider streets, however, and it will be economy for the city to anticipate these needs by reservation in the most effective manner of the right of way required for greater street capacity. The streets listed above are those which should have prompt attention. The others not listed but shown on the plan to need future widening are but slightly less important.



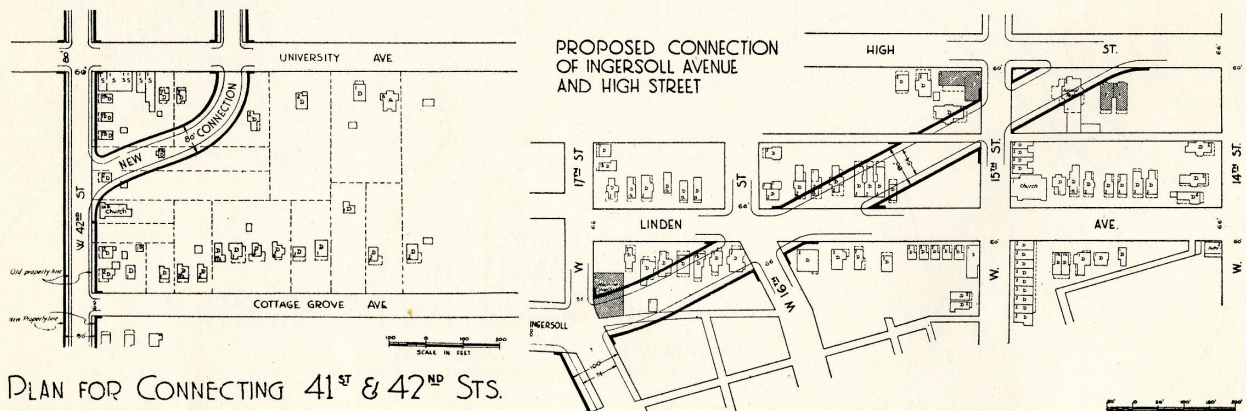
CORRECTION OF JOGS IN UNIVERSITY AVE.

b—University Avenue connection between Sixth and Ninth. This project has been under consideration for some time and every year becomes more costly and difficult of accomplishment. There is no disagreement as to the necessity of making University Avenue a continuous thoroughfare by the elimination of all such faults as are involved here. The method only is in question. It appears now that the most practicable and inexpensive plan would be to extend this street practically straight through the property between Sixth and Ninth, as shown on the plan above.



PLAN FOR THE DEVELOPMENT OF UNIVERSITY AVENUE—EAST SIDE

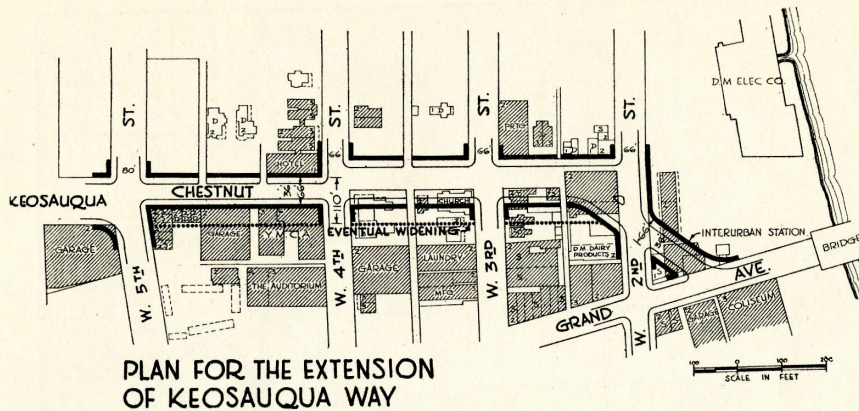
c—University Avenue on the east side also requires correction. The most feasible way of carrying this very useful thoroughfare continuously through the east side is to connect it with Filmore Street. The detailed plan appears above.



PLAN FOR CONNECTING 41ST & 42ND STS.

d—Forty-first and Forty-second Streets, if connected through the block between Forest and University, would become a most important crosstown thoroughfare. An opportunity exists now to make the necessary connection at little expense.

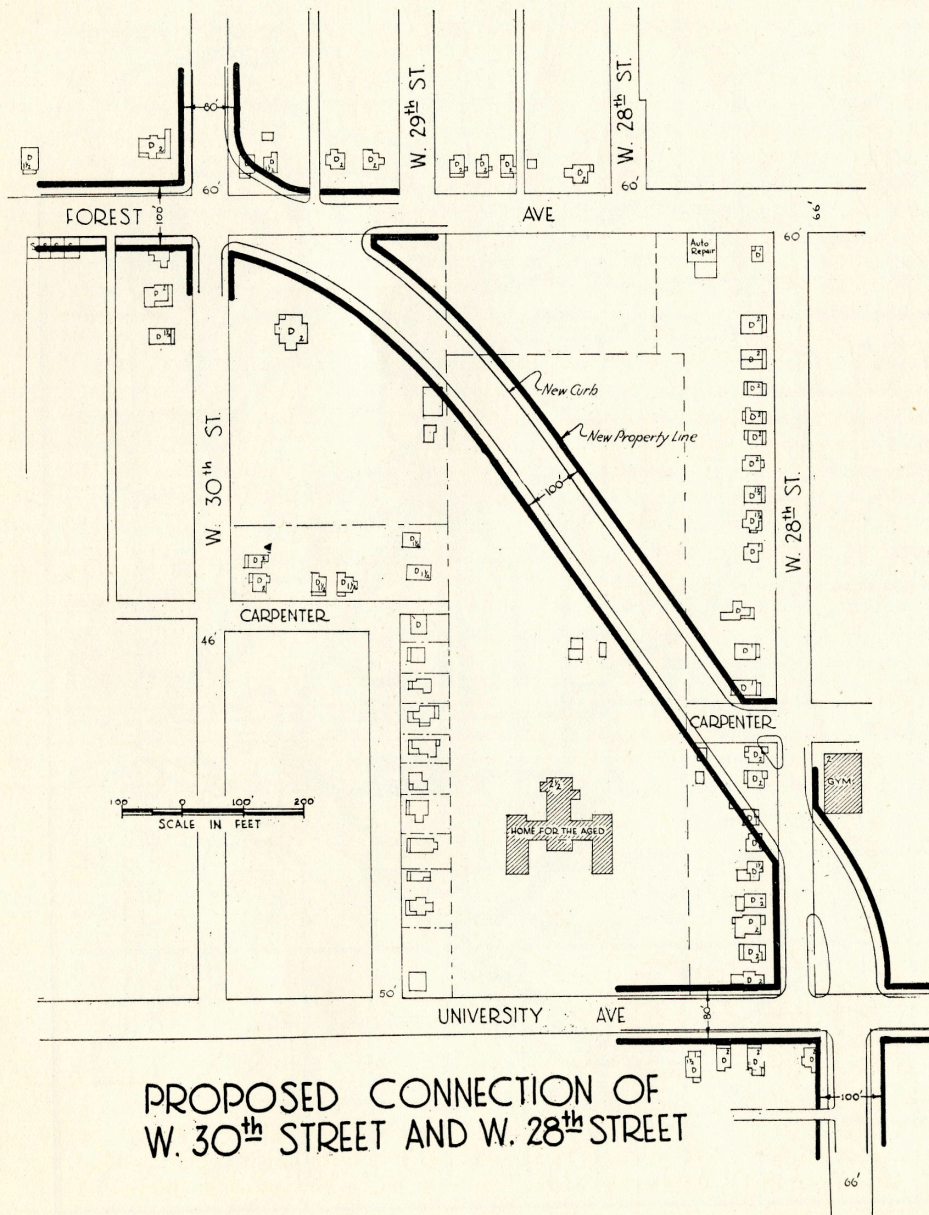
e—Connection of Ingersoll and High between Seventeenth and Fifteenth. This connection will give traffic from the west a direct route to north section of business district.



PLAN FOR THE EXTENSION
OF KEOSAUQUA WAY

no call for the destruction of expensive buildings merely to create public automobile storage space in the street. Eventually, however, the full 110-foot width ought to be secured.

f—Continuation of Keosauqua Way to Second Street. This project is an essential part of the original plan of Keosauqua Way and is largely a problem of economical street widening. The Brown Hotel and Y. M. C. A. prevent continuing the original 110-foot width, but these buildings are far enough apart to accommodate a 54-foot or six-line roadway. This width will be sufficient for some time to carry all the traffic likely to use the street here. There is



PROPOSED CONNECTION OF
W. 30th STREET AND W. 28th STREET

g—Connection of Thirtieth Street and Twenty-eighth between Forest and University. This will make Beaver Avenue and Cottage Grove practically a continuous thoroughfare and Thirtieth and Twenty-eighth together a more serviceable crosstown street.

In addition to these recommended improvements are several others of almost equal importance. Consideration should be given

h—The connection of South Union and Indianola.

i—Connecting Fifth and Sixth, south side.

j—Connection of Woodland and Pleasant.

k—Elimination of jogs on Dean and Court east of the capitol.

l—Connection of Prospect Road and Sixth to make Seventh Street more useful as a relief of Sixth.

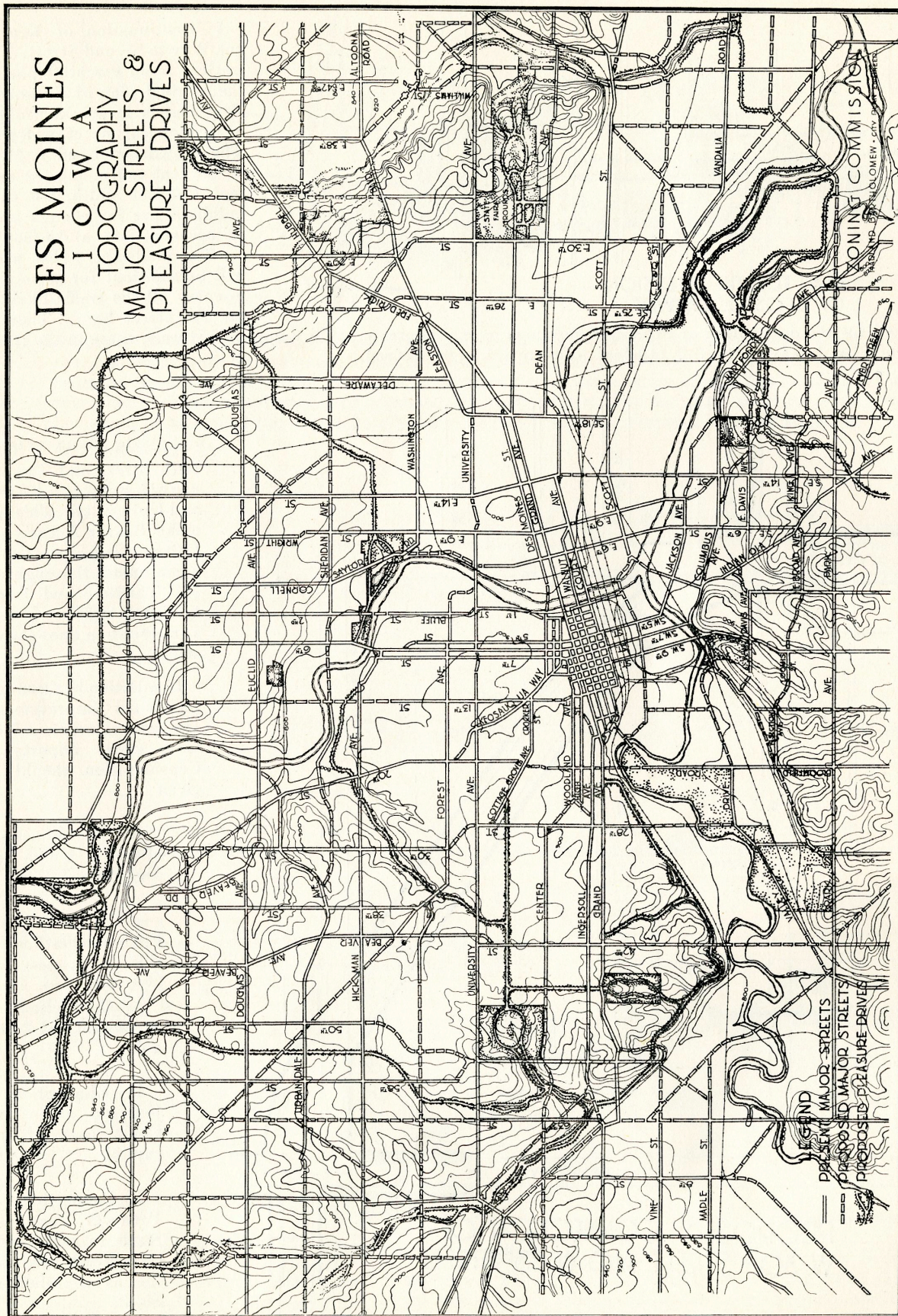


PLATE No. 15

Topography—Major Street and Pleasure Drives

Reference was made in Plate 7 to certain broader characteristics of the terrain upon which the Des Moines of the future will be built. The plate opposite gives a more complete view of the contour of the land in the immediate vicinity of Des Moines. It will be seen that the upland areas are in spots quite rugged. The projection of new major streets properly through such areas depends upon topographic surveys made at the time the land is subdivided. The lines of major streets shown on the plans presented herewith are not to be considered absolutely unchangeable. The placement of new thoroughfares in outlying territory is subject to change when more accurate surveys are made. At present it is possible only to show the general scheme of streets and indicate roughly how they should fit the ground.

The plate opposite also shows the proper correlation of major streets, pleasure drives and topography. The Town Planning Committee of Des Moines has been at work for some time upon a system of boulevards and parkways. The plans for these features must in all cases be harmonized with the major street plan.

There should be a clear understanding of the difference between the functions of pleasure drives and major streets. The latter, being primarily economic in significance, should have precedence in land platting. The pleasure drives should be arranged in continuous routes through valleys or along ridge tops or where natural conditions favor the creation of a distinctive and attractive drive system, as in the Four Mile Creek district. Intersections with major streets deserve careful study, as do crossings of railroads and probable future industrial districts. Note in this connection the arrangement of trafficways west of the city. In every possible case, moreover, a serviceable major street should run parallel to a pleasure drive so that traffic restrictions upon the latter may be enforced. This method of protecting an investment in pleasure routes is illustrated in the extreme northwest section of the map. If the requirements of utilitarian traffic are not properly met by an adequate major street system it will be practically impossible for the city to preserve the pleasure-giving character of its boulevard and parkways.

In this map more or less continuous pleasure drive routes are shown. These conform in general to plans already presented by the Town Planning Committee. In this initial study of major streets there has been no special effort to develop a practicable plan of parkways and boulevards. As far as pleasure drive routes are concerned the plan opposite is illustrative only, its primary purpose being to show how the two principal types of trafficways should be correlated. The study of parkways and boulevards will come later.

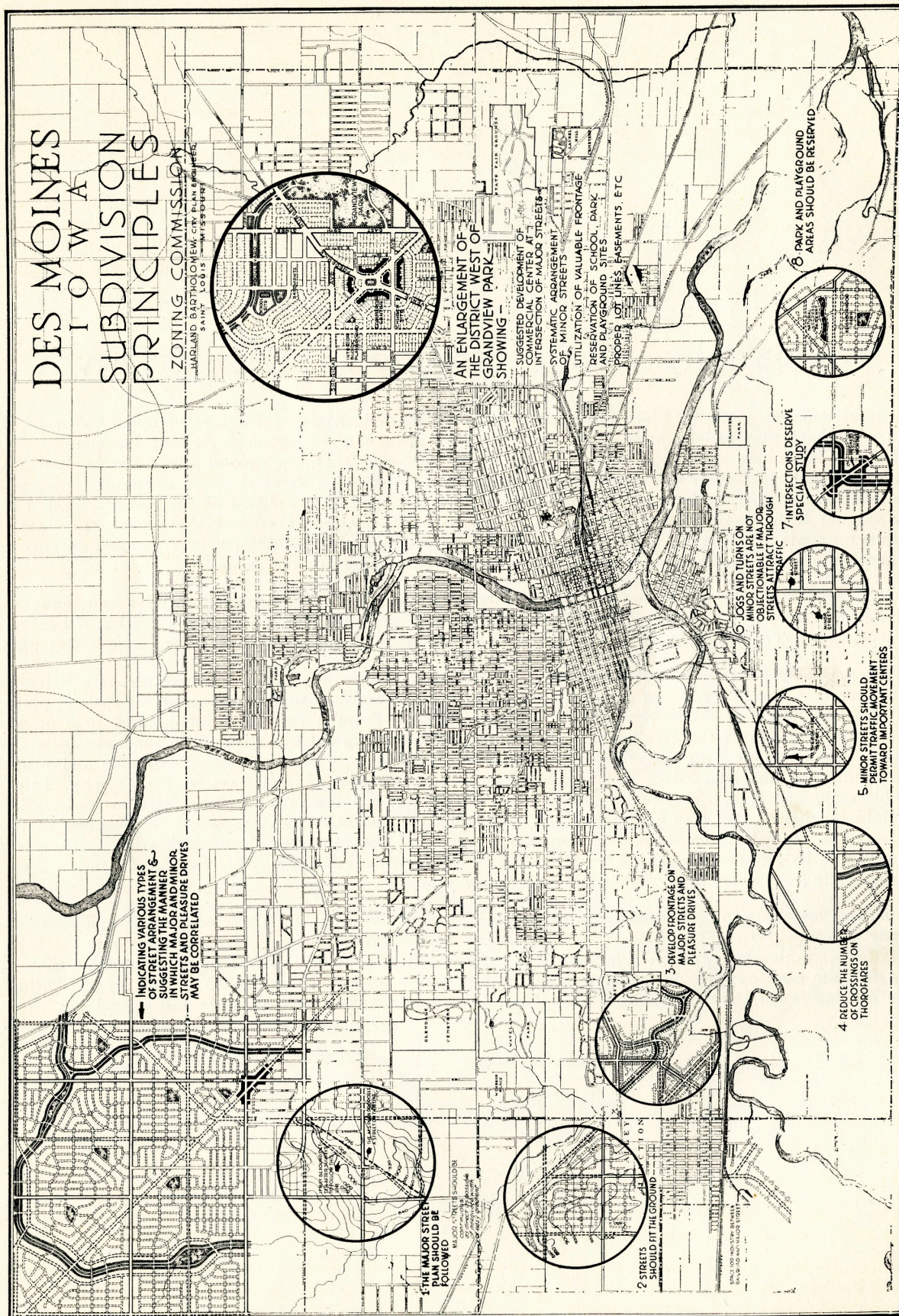


PLATE No. 16

Subdivision Principles

Land subdivision practice in Des Moines in years past has been free from municipal direction or control. This may have been an advantage to subdividers, but it has not been altogether beneficial to the general public. The community has been required to accept and use numerous streets of an inferior sort which should not have been opened.

The development of a system of major streets according to a predetermined plan, however, calls for a measure of municipal guidance in future land platting in and around Des Moines. The city, in its own behalf, must make an effort to elevate subdivision standards and practices. The plate opposite shows certain general faults of old subdivisions and indicates diagrammatically the fundamental principles which should be followed in the design of new streets and lots.

From a community standpoint, as well as from the point of view of property owners, land will be improved for city use if it is subdivided with regard for the following principles:

1. Conformity to the major street plan in the matter of width and alignment.
These particular streets should be continuous, as direct as possible, of adequate width and easy gradient.
 2. Proper adjustment of streets to the contour of the ground.
In general, streets of all types should run parallel to contours. The lots on the upper side of the street will rise at the rear; those on the lower side of the street will drop to the rear. It is found that lots sloping thus are much more easily sold and used for residential purposes than those along a street which runs straight up a hill.
 3. Primary consideration should be given frontage on major streets and pleasure drives.
It is ordinarily found that superior land values prevail on these important thoroughfares. It will be an advantage to the property owners and to the city at large because of increased tax revenues, if the maximum frontage is secured on these streets. The platting of streets and lots along diagonal thoroughfares deserves special attention. Pleasure drives, moreover, should be laid out so that full depth, desirable lots may be laid out on them.
 4. Cross streets and those tributary to major streets and pleasure drives should be reduced to a minimum.
Reduction of the number of intersections on a major street at once increases the salable frontage and reduces the traffic hazard. The same applies to pleasure drives.
 5. The arrangement of minor streets should be such as to favor the general flow of traffic to the principal arteries.
Home owners in the quiet residential districts should find it easy to reach a wide, well-improved major street which will take them directly to the business district or to any other important center.
 6. Jogs and abrupt turns are especially to be avoided on major streets.
On minor residential streets, however, such impediments to traffic tend to protect them from any undesirable circulation of heavy, through traffic.
 7. Intersections on major streets deserve special study.
The property frontage at such points often has a potential value for business purposes. The traffic problem where several important arteries intersect should also be anticipated and the intersection designed to reduce congestion and confusion to minimum. At such points the arrangement of lots should favor commercial rather than residential improvements.
 8. As a general rule 10% of subdivisions over 20 acres in extent should be set aside for park and playground purposes.
Rugged slopes, wooded tracts, water courses, lakes and commanding hill tops have a wide appeal. A far-sighted subdivider can frequently use a small park or playground to increase the value and salability of property nearby. Dedication of park, parkway, boulevard or playground land can be turned to advantage if the subdivider devises his scheme of lots and streets properly.
 9. School and church sites should be reserved at the time land is platted.
- The above matters are illustrated in the plate opposite. The subdivider will find need also to consider the following points.
10. All side lot lines should be perpendicular to the street.
 11. Alleys should be omitted, except in the rear of lots likely to be commercial.
 12. Easements should be reserved on rear and side lot lines for utilities and no poles and wires should appear on the street; trees should be planted at the time every new subdivision is put upon the market.

Other matters, such as lot sizes, street improvements, building lines, easements for utilities, tree planting and the like, are also to be reviewed in the preparation of subdivision plans. The land subdivision rules proposed (Appendix F) cover these points.

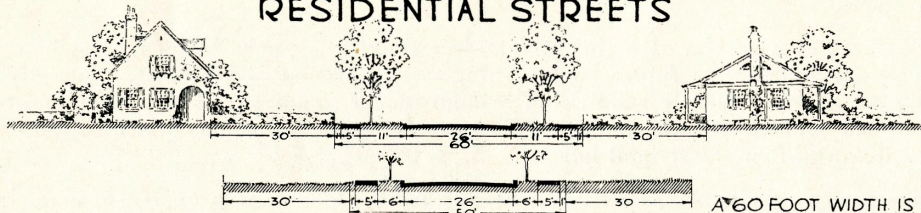
PROPOSED DEVELOPMENT OF MAJOR AND MINOR STREETS DES MOINES - IOWA

HARLAND BARTHOLOMEW

ST. LOUIS - MO.

CITY PLAN ENGINEER

RESIDENTIAL STREETS



EXTREME WIDTH ON PURELY LOCAL RESIDENTIAL STREETS IS UNNECESSARY EXCEPT FOR EFFECT.

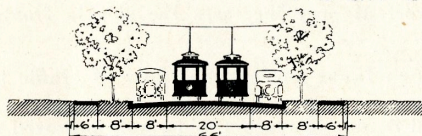
A 50 FOOT STREET SHOULD BE USED ONLY IN THOSE DISTRICTS WHERE NO MORE THAN 3 LINES OF VEHICLES WILL EVER BE NECESSARY.

A 60 FOOT WIDTH IS MORE FLEXIBLE AND SHOULD BE THE MINIMUM FOR MOST STREETS. ULTIMATELY IT COULD BE WIDENED TO ACCOMMODATE 4 LINES OF VEHICLES IF NECESSARY.

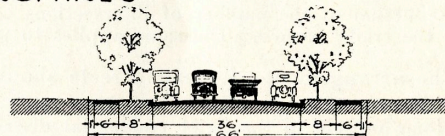
MAJOR STREETS

STREET AND ROADWAY WIDTHS SHOULD NOT BE ESTABLISHED ARBITRARILY. ROADWAY WIDTHS—THE DISTANCE BETWEEN CURB LINES—SHOULD BE BASED UPON THE NUMBER OF LINES OF VEHICLES THEY ARE TO ACCOMMODATE AND STREET WIDTHS—THE SPACE BETWEEN PROPERTY LINES—SHOULD BE DETERMINED BY THE WIDTH OF ROADWAY TOGETHER WITH PROVISION FOR AMPLE SIDE WALK SPACE. HERE ARE SHOWN TYPICAL EXAMPLES OF MODERN STREET DESIGN.

FOUR LINE THOROFARES

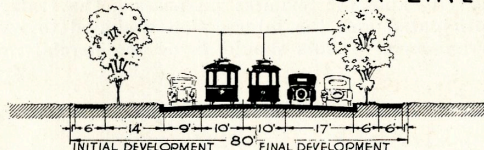


INADEQUATE FOR MAJOR STREET PURPOSES. THERE SHOULD BE ROADWAY SPACE FOR AT LEAST ONE FREE MOVING LINE OF VEHICLES ON EACH SIDE OF THE STREET. THIS IS NOT OBTAINABLE ON A 66 FOOT STREET WHICH CARRIES A CAR LINE.

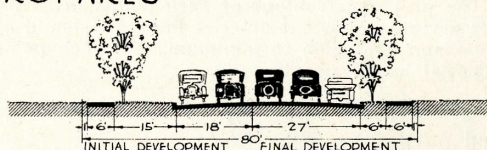


A 66 FOOT STREET IS THE MINIMUM WIDTH FOR A MAJOR STREET WITHOUT CAR LINES. WHERE ADDITIONAL VEHICULAR PARKING SPACE IS REQUIRED THE ROADWAY SPACE COULD BE INCREASED 6 FEET AND VEHICLES PARK AT AN ANGLE OF FORTY FIVE DEGREES ON ONE SIDE OF THE STREET.

SIX LINE THOROFARES

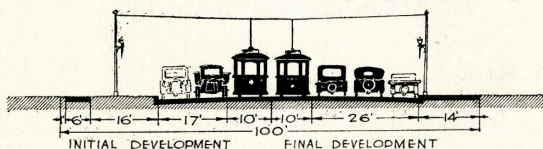


THIS SHOULD BE THE MINIMUM WIDTH FOR A MAJOR STREET CARRYING STREET CARS IN THE OUTLYING DISTRICTS. WHERE TRAFFIC IS LIGHT THE ROADWAY NEED NOT BE DEVELOPED TO ITS ULTIMATE WIDTH IN THE FIRST INSTANCE.

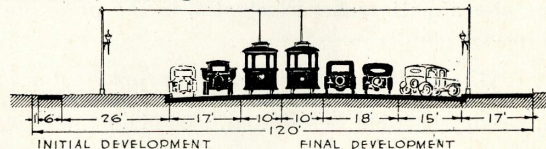


ALL NEW MAJOR STREETS SHOULD HAVE A MINIMUM WIDTH OF 80 FEET. THE STREET SHOULD BE DEVELOPED SO THAT IT CAN ULTIMATELY BE WIDENED TO A 6 LINE THOROFARE AND PUBLIC UTILITIES SHOULD BE INSTALLED IN ACCORDANCE WITH FINAL DEVELOPMENT.

EIGHT LINE THOROFARES



MAIN RADIAL THOROFARES WITH CAR LINES SHOULD HAVE A WIDTH OF 100 FEET. THIS WIDTH WILL ACCOMMODATE EIGHT LINES OF VEHICLES. A 100 FOOT STREET IS ALSO A DESIRABLE 6 LINE THOROFARE IN A RESIDENTIAL DISTRICT AS IT PROVIDES ADDITIONAL GRASS PLOT BETWEEN SIDEWALK AND CURB AND GIVES THE STREET MORE CHARACTER.



A 120 FOOT STREET WOULD ACCOMMODATE 6 FREE MOVING LINES OF VEHICLES AND ANGULAR PARKING AT EITHER SIDE OF THE STREET. SIDEWALK SPACE IS ALSO CONSIDERABLY INCREASED.

NOTE—FREE MOVING VEHICLES ARE SHOWN IN SOLID BLACK—PARKED VEHICLES ARE SHOWN BY OUTLINE.

Street Cross Sections

The plate opposite indicates the proper manner of classifying streets for modern traffic use. It answers essential questions regarding the capacity of streets of different width, the relation of roadway space to sidewalks and the requirements of street railway and bus lines. This plate should be used as a guide in the platting of all new streets.

Des Moines has suffered from previous lack of standards in street development. In outlying, sparsely built up districts where land is plentiful, the tendency seems to be to make new streets narrower and less characteristic of a populous, growing city, the capital of a rich state. Forty-foot widths are frequently found on quite important streets. Occasionally one property owner will plat half a street, expecting his neighbor to do likewise; but the latter often has different ideas and the public thereafter must make whatever use it can of the half-street.

There are cases in which a forty or even thirty-foot street may be platted without serious consequences to the community or to purchasers of property on it. Such cases, however, are rare and should be made special exceptions to the general rule that no minor street should be less than 50 feet in width. This is a fairly satisfactory right-of-way for ordinary street purposes in a single-family residential district. The best interests of the city, however, would be served by a requirement that 60 feet be made the standard for minor streets. In all cases where such widths are used the provision of light and air in the district should be assured by the establishment of building lines at least 30 feet from the street line.

For major street purposes, a width of 80 feet should be considered the minimum in all new subdivisions. A right-of-way so wide will comfortably accommodate a six-line roadway and sidewalks of proper proportions. It must be remembered that the interest of the community is in the right-of-way rather than the pavement. It is not at all necessary that a wide, expensive roadway be constructed at the time the street is first laid out.

Wherever it appears that a major street in future years will have more than ordinary importance in the circulation scheme, its width should be 100 or 120 feet. A narrow roadway can be built upon a street of this width just as easily as it can upon a much narrower street. When the traffic volume increases in later years, however, the city will possess a street which can be improved to meet the changing demands without the necessity of costly widening.

STREET DESIGN

IN PLANNING NEW STREETS AND RECONSTRUCTING OLD ONES TO MEET REQUIREMENTS OF MODERN TRAFFIC OBSERVE THE FOLLOWING PRINCIPLES.

DEVELOP SYSTEM OF MAJOR STREETS - WIDE DIRECT THOROUGHFARES

RELATE ALL STREETS TO TOPOGRAPHY SO THAT EASY GRADES MAY BE SECURED AND ALL STREET FRONTAGE MAY BE USED.

ASSIGN WIDTH TO STREETS ACCORDING TO VOLUME OF TRAFFIC THEY ARE TO BEAR.

BASE WIDTH ON NUMBER OF LINES OF MOVING AND STANDING VEHICLES ULTIMATELY TO BE ACCOMMODATED.

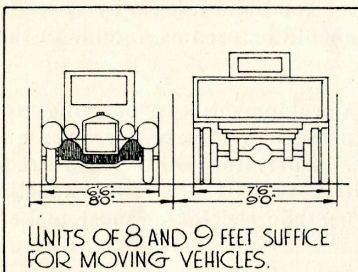
ADJUST ROADWAY AND SIDEWALK PROPORTIONS OF EACH PARTICULAR STREET TO NORMAL DEMANDS.



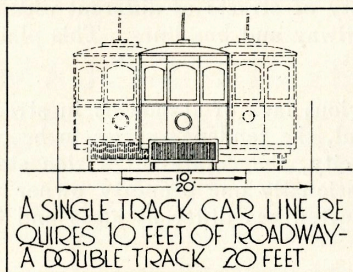
SEVERAL EXAMPLES ARE SHOWN BELOW TO ILLUSTRATE THE INTERRELATIONSHIP OF STREET AND ROADWAY WIDTHS AND TRAFFIC REGULATIONS.

IN ANALYZING THE DIAGRAMS IT SHOULD BE BORNE IN MIND THAT THE "STREET" IS THE ENTIRE SPACE BETWEEN PROPERTY LINES.

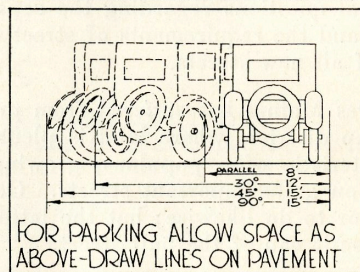
STANDARDS FOR ROADWAY DESIGN AND TRAFFIC REGULATION



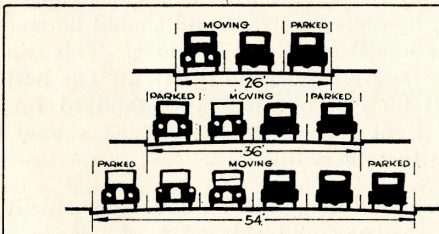
UNITS OF 8 AND 9 FEET SUFFICE FOR MOVING VEHICLES.



A SINGLE TRACK CAR LINE REQUIRES 10 FEET OF ROADWAY - A DOUBLE TRACK 20 FEET

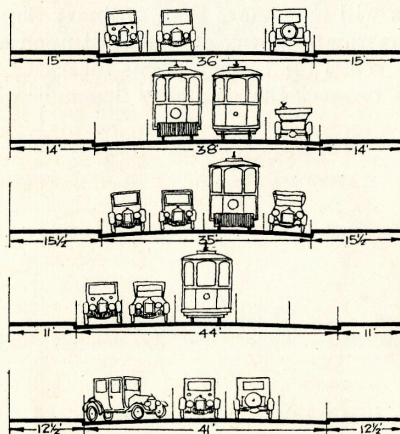


FOR PARKING ALLOW SPACE AS ABOVE-DRAW LINES ON PAVEMENT



A 3 LINE ROADWAY (26 FEET) IS STANDARD FOR QUIET RESIDENTIAL STREETS. A MINOR STREET WITH SOME THROUGH TRAFFIC OR CONSIDERABLE PARKING SHOULD HAVE A 4 LINE ROADWAY (36 FEET) GREATER WIDTH OF ROADWAY IS GENERALLY WASTED UNLESS THE STREET IS MADE A FULL 6 LINE THOROUGHFARE WHICH REQUIRES A 54 FOOT PAVEMENT.

ECONOMICAL ROADWAYS FOR EXISTING 66 FOOT STREETS.



1. THE NORMAL DEVELOPMENT
FOUR LINES - PARKING PARALLEL TO CURB OR PROHIBITED ENTIRELY ROADWAY 36 FEET, SIDEWALKS 15 FEET

2. WITH DOUBLE CAR TRACK
FOUR LINES - ALL MOVING - NO PARKING ROADWAY 38 FEET, SIDEWALKS 14 FEET EACH

3. AS ABOVE ONE TRACK REMOVED
ONE WAY STREET - TWO LINES MOVING - PARALLEL PARKING ON EACH SIDE ROADWAY 35 FEET, SIDEWALKS 15 1/2 FEET

4. SINGLE CAR TRACK IN CENTER
FIVE LINES TWO STANDING PARALLEL TO CURB - THREE MOVING - ROADWAY 44 FEET, SIDEWALKS, 11 FEET

5. VARIATION OF NUMBER ONE
ONE LINE PARKED AT 45° - ONE LINE PARALLEL - TWO MOVING ROADWAY 41 FEET, SIDEWALKS 12 1/2 FEET

HARLAND BARTHOLOMEW
City Plan Engineer St. Louis Mo. 1923

Street Design

Few cities correlate paving programs and traffic control. In engineering offices where pavements are designed it is customary to use long established formulas. A 50-foot street gets a 30-foot pavement, a 60-foot street calls for one 40 feet wide. If there is any question regarding the choice between a wider and a narrower roadway, the arguments of paving material salesmen in favor of the former are considered and property owners are asked for opinions. The police department is seldom consulted. The result is that little used streets frequently bear pavements wider than they need to be while some of the busiest thoroughfares are equipped with a roadway not designed for modern traffic uses.

There are two aspects of this subject of street design that deserve consideration here. One has reference to economics; the other to the aggravating problems of traffic movement and regulation. As has previously been stated, modern motor vehicles tend to move upon streets in straight lines. Experience has demonstrated that nine (9) feet of roadway space is sufficient to accommodate a single line of free moving vehicles upon the majority of streets. There are cases, however, where ten (10) feet are required for certain lines, notably where busses or street cars operate or where heavy trucking occurs, but such streets require special study.

Roadways should be designed with full regard for the number of lines of moving vehicles to be accommodated upon the street, and also for the parking needs of the district. The plate opposite illustrates the commonly accepted standards for efficient roadway design. A pavement to carry two moving lines of vehicles and two standing parallel to the curbs needs to be only 36 feet wide. Any extra width is an unnecessary and costly waste of material and a source of confusion and danger to traffic. Excess street surface above that required for an even number of lines of vehicles invites reckless driving. A 36-foot roadway will carry a four-line automobile flow with perfect efficiency. A 40-foot roadway will do no more. A 26-foot roadway will render similar service on a residential street; 30 feet of pavement merely carries three lines and four extra feet of surface. This waste of 4 feet on 30 and 40-foot roadways amounts to over 2300 yards in every mile. Property owners pay an amount approximating \$7000 at \$3.00 per yard for something the community does not need.

In congested centers where parking space is demanded the roadway width should be determined by the number of lines of moving vehicles, a consideration of their sizes and the manner of parking required by the traffic code. Illustrations of the method of using unit roadway widths are shown opposite. It is desirable also, where conditions require such adjustment, to vary curb alignments to make space for vehicles passing street car loading platforms, for bus stops, for the line up of a greater number of cars at an intersection. These are merely suggestions of the need for greater elasticity in street design, a need introduced with the motor age.

Traffic Movement and Control in the Business District

Downtown traffic problems which cause much concern elsewhere are not particularly serious in Des Moines. There are two reasons for this. In the first place, the Des Moines business district, where congestion tends to occur, is well arranged for traffic movement. The streets are all 66 feet wide, the blocks are square and approaches from all directions at present are adequate. Moreover, there is a proper proportion of roadway space to private property and few buildings of excessive height. How Des Moines compares with other cities may be seen below, giving the per cent of roadway space in business district.

Des Moines.....	47.6 per cent	Portland, Ore.....	34.5 per cent
Washington.....	44 per cent	Minneapolis.....	30.5 per cent
San Diego.....	41 per cent	Detroit.....	29.5 per cent
Cleveland.....	39.5 per cent	Chicago.....	29 per cent
Seattle.....	37.5 per cent	Denver.....	27.5 per cent
St. Louis.....	37 per cent	Salt Lake City.....	25.5 per cent
San Francisco.....	34.5 per cent	Toledo.....	24 per cent
Pittsburgh.....	34.5 per cent	Los Angeles.....	21.5 per cent

These conditions all operate to reduce congestion and simplify traffic control.

Another factor in the situation is the excellent work of traffic police. It is apparent that an honest effort is being made to enforce regulations. This daily effort to secure observance of the rules, especially in the matter of parking, is having effect. One could find convenient parking space in the business section of almost any city provided a reasonable parking time limit were enforced. Des Moines, by keeping vehicles moving, is simplifying the problem for those who wish to use street space in the business district merely for short periods. It is found by actual count, for instance, that there is space for 1372 vehicles within a five-minute walk of Seventh and Locust Streets and space for 2770 within a ten-minute zone.

The ultimate solution of the all-day parking problem, however, is in the private garage. It is not incumbent upon the city to widen streets and lay expensive pavements merely to enable a favored few to store automobiles on public property. Even in the days of horses, there were ordinances that aimed to preserve certain streets for the use of moving vehicles. In 1900 it was unlawful to hitch teams or allow carriages to stand on Court, Cherry, Mulberry, Walnut and Locust Streets downtown* Courts have long sustained laws, prohibiting the use of public highway space for private purposes. Yet the demands of motor vehicle owners for parking privileges differ but slightly from those which any store owner might make if he felt that it were his privilege to pile boxes and bales of goods upon the street.

The city has an undeniable obligation to prevent interference with circulation. The policy to be followed in this respect may be outlined as follows:

Indefinite parking privilege on the streets may be granted so long as there is no resulting inconvenience to the general public.

When inconvenience appears, regulation of parking becomes necessary and the simplest form of regulation is the imposition of a time limit. There may also be requirements as to the manner of parking.

If the parking privilege interferes with the movement of vehicles on certain streets the privilege should be withdrawn. It is not difficult to determine the principal lines of vehicular flow and to open such channels for movement as are most needed. Circulation in and through the Des Moines business district is suggested in the plate opposite. The streets needed for movement are clearly indicated.

When it seems to be necessary to clear certain streets for traffic movement, the prohibition of parking for a limited period, during "rush hours," for instance, may suffice. This frequently accomplishes the result desired and is much less drastic than a blanket prohibition.

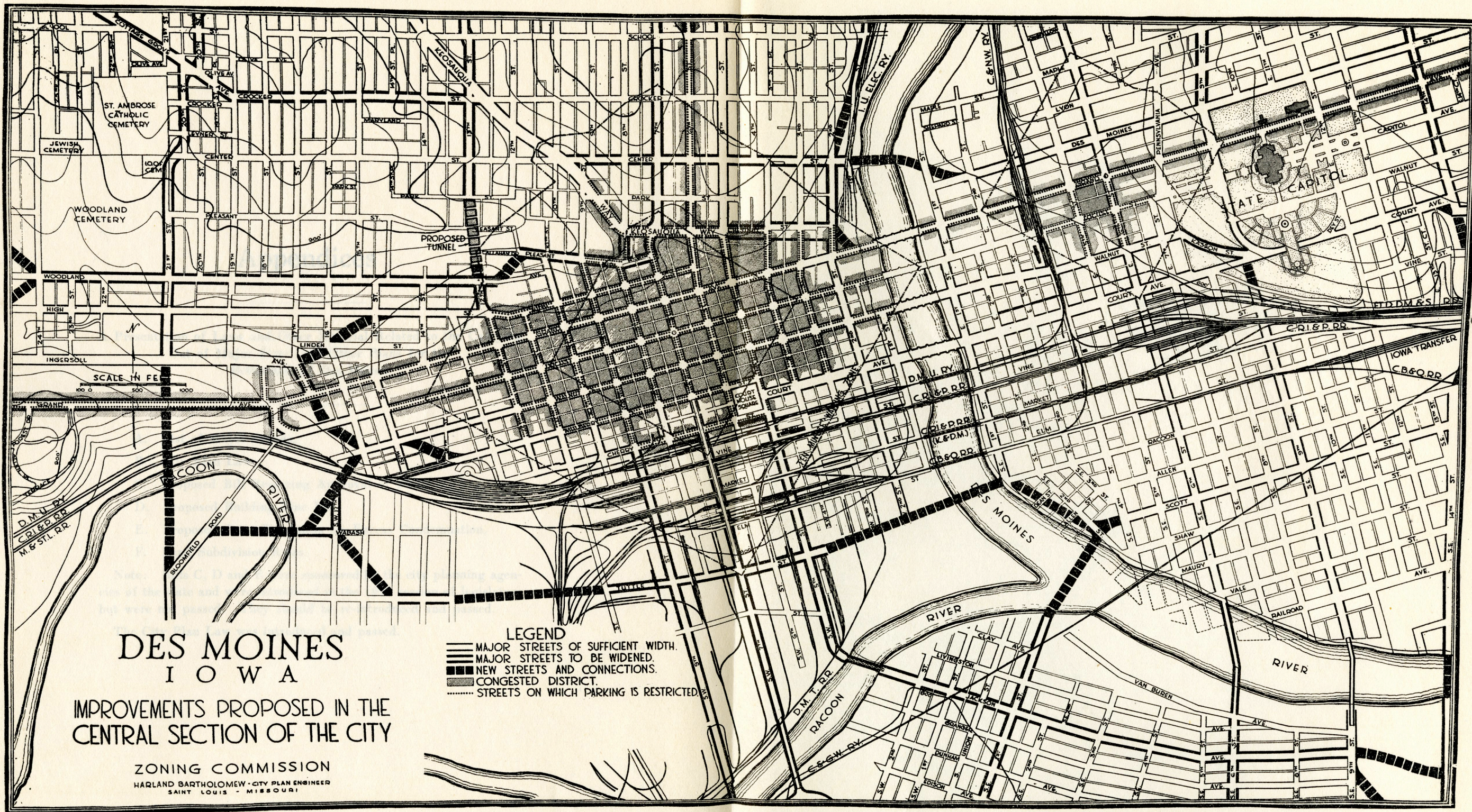
To supplement the prohibition of parking there may be adopted such devices as elimination of left-hand turns, rerouting of street cars and prohibition of trucking during rush hours.

If the prohibition of parking on successive streets fails to stimulate circulation in the district, more expensive remedies must be found. These should follow in the order given:

1. Widening of the roadway so that a street may carry a greater number of lines of vehicles. This can often be done where sidewalk space is not in demand.
2. Opening connections to parallel inapproachable streets and putting them to use. This device is especially useful as a means of separating different kinds of traffic. Special truck routes can be created and by-pass streets around congested centers opened.
3. Widening the street by the removal of buildings or arcading.
4. Construction of elevated sidewalks or roadways.
5. Construction of subways or two-level streets.

It will be noted that all the above devices for traffic relief are arranged according to their cost. The purpose in presenting them thus is to indicate how extravagant it is for the city to spend money on expensive street widenings and openings before it has exhausted other, cheaper means of securing relief.

*Ordinance book, 1900, page 158.



APPENDIX A

NAME OF STREET	EXISTING WIDTHS IN FEET		TRAFFIC CAPACITY (IN LINES OF VEHICLES)			PROPOSED STREET WIDTH IN FEET	REMARKS
	STREET	ROADWAY	ROADWAY	STREET	PROPOSED FOR STREET		
AURORA					4	66	Open from West City Limits to Thirtieth St. Extend east from Bowdoin St. to East City Limits.
North Twelfth to North Sixth.....	30	.....	.....	3		
North Sixth to Bowdoin	60	.....	.....	4		
AVENUE FREDERICK HUBBELL.....					8	100	
East Eighteenth to Douglas.....	70	4			Connect Twenty-eighth and Thirtieth Sts. between University and Forest. Extend Beaver Ave. northwest from Forty-first St. to City Limits.
Douglas to City Limits.....	66	.....	.....	4		
BEAVER-COTTAGE GROVE-CROCKER					8	100	
BEAVER AVENUE							
City Limits to Forest Avenue.....	66	40	4	4			
COTTAGE GROVE AVENUE							
Twenty-eighth to Nineteenth.....	66	42	4	4			
CROCKER STREET							
Nineteenth to Thirteenth.....	66			4			Connect Center St. with Des Moines St., from West First St. to East Second St. Des Moines St. should also connect with Ave. Frederick Hubbell.
Nineteenth to Fifteenth.....		34	4				
Fifteenth to Thirteenth.....		40	4				
CENTER-DES MOINES.....					6	80	
CENTER							
Keosauqua Way to First.....	66	34	4	4			
DES MOINES							
East Second to East Eighteenth.....	80			6			
East Second to East Twelfth.....		34	4				
East Twelfth to East Eighteenth.....		26	3				
CENTER-WOODLAND-PLEASANT							
CENTER					6	80	
Polk Boulevard to Forty-fourth.....	30	3			Connect Center St. from near Twenty-eighth St. with Woodland Ave. at Twenty-fourth and extend westward from Polk Blvd.
Forty-fourth to Forty-second.....	60	26	3	4			
Forty-second to Forty-first	45	26	3	3			
Forty-first to Thirty-eighth and One-half	50	26	3	3			
Thirty-eighth and One-half to Thirty-seventh and One-half	63	26	3	4			
Thirty-seventh and One-half to Thirty-fifth	58	26	3	4			
Thirty-fifth to Thirtieth.....	60			4			
Thirty-fifth to Thirty-first		26	3				
Thirty-first to Thirtieth.....		.....	.....		
WOODLAND					6	80	
Twenty-fifth to Fourteenth.....	66			4			
Twenty-fifth to Twenty-first		24	3				
Twenty-first to Fourteenth.....		38	4				Connect Woodland Ave. with Ingersoll Ave. east of Twenty-eighth St. Correct jog between Woodland Ave. and Pleasant St. by cut-off between Twelfth and Tenth Sts.
Fourteenth to Twelfth.....	61	38	4	4			
PLEASANT							
Ninth to Seventh.....	58			4			
Ninth to Eighth.....		30	3				
Eighth to Seventh.....		26	3				
CHERRY							
Twelfth to Fifth.....	66			4	4	66	
Twelfth to Ninth.....		32	3				Connect with Beaver at Thirty-seventh.
Ninth to Seventh.....		42	4				
Seventh to Fifth.....		43	4				
COLLEGE					4	66	
Forty-first to Forty-second	25				

NOTE: NC—No change.

APPENDIX A (Continued)

NAME OF STREET	EXISTING WIDTHS IN FEET		TRAFFIC CAPACITY (IN LINES OF VEHICLES)			PROPOSED STREET WIDTH IN FEET	REMARKS
	STREET	ROADWAY	ROADWAY	STREET	PROPOSED FOR STREET		
COLLEGE—(Continued)							
Forty-second to Forty-eighth.....	50			3			
Forty-second to Forty-fourth.....		26	3				
Forty-fourth to Forty-eighth.....		24	3				
COLUMBUS-HARTFORD-GRATIS- EVERGREEN							
COLUMBUS					6	80	Connect Columbus with Indianola. Open Southeast Eighteenth below East Bell and connect with Gratis and Evergreen. Correct jog between Hartford and Gratis.
Southeast Second to Southeast Sixth.....	50	.....	.....	3			
HARTFORD							
Southeast Sixth to Gratis.....	66	.....	.....	4			
GRATIS	100	.....	.....	8		NC	
EVERGREEN	60	.....	.....	4			
COURT AND DEAN							
COURT							Correct jog at East Fourteenth. Connect Court with Dean at East Eighteenth. Correct jog at East Thirty-ninth St.
Fifth to East Fourteenth.....	99		8		8	99	
Fifth to River.....		67	6				
River to East Seventh.....		48	4				
East Seventh to Penn.....		43	4				
Penn to East Twelfth.....		50	5				
East Twelfth to East Fourteenth.....		32	3				
East Fourteenth to East Eighteenth.....	100	2-18	4	8	8	100	
DEAN					6	80	
East Eighteenth to East Thirty-eighth.....	80			6			
East Fifteenth to East Thirtieth.....		26	3				
East Thirtieth to East Thirty-eighth.....		.....	.....		
East Thirty-eighth to City Limits.....	44	.....	.....	3			
DELAWARE							
Easton to Washington.....	66	.....	.....	4	6	80	
Washington to Mattern.....	46	.....	.....	3			
Mattern to Thompson.....	66	.....	.....	4			
Thompson to Guthrie.....	48	.....	.....	3			
Guthrie to City Limits.....	66	.....	.....	4			
DOUGLAS-EUCLID-DOUGLAS							
DOUGLAS						6	80
City Limits to Merle Hay Road.....	66	.....	.....	4			Correct jog between Beaver Rd. and Euclid. Extend Euclid and make new connection with Douglas east of C. N. W. R. R.
Merle Hay Road to Forty-seventh.....	60	40	4	4			
Forty-seventh to Beaver Avenue.....	63	40	4	4			
Beaver Avenue to Thirty-eighth.....	55	21	2	3			
Thirty-eighth to Beaver Road.....	50	21	2	3			
On Beaver Road to Thirtieth.....	66	21	2	4			
EUCLID							
Thirtieth to Twentieth.....	66	21	2	4			
Twentieth to River.....	80	21	2	6			
River to North Sixteenth.....	50	21	2	3			
North Sixteenth to North Sixth.....	70	34	4	4			
North Sixth to East Fourteenth.....	80						
North Sixth to North Second.....		34	4				
North Second to Amherst.....		27	3				
Amherst to East Fourteenth.....		20	2				
DOUGLAS							
East Fourteenth to East Twenty-ninth.....	66	.....	.....	4			
East Twenty-ninth to City Limits.....	40	.....	.....	3			

NOTE: NC—No change.

APPENDIX A (Continued)

NAME OF STREET	EXISTING WIDTHS IN FEET		TRAFFIC CAPACITY (IN LINES OF VEHICLES)			PROPOSED STREET WIDTH IN FEET	REMARKS
	STREET	ROADWAY	ROADWAY	STREET	PROPOSED FOR STREET		
EAST EIGHTEENTH					6	80	
Scott to Dean	80	26	3	6			
Dean to Walnut	40	24	3	3			
Walnut to Des Moines	50	24	3	3			
Des Moines to East University	60	24	3	4			
East University to Easton	66	36	4	4			
EAST FIRST STREET							
Raccoon to Grand	80	—	—	6	6	80	
Raccoon to Vine		—	—				
Vine to Locust		40	4				
Locust to Grand		34	4				
EAST FORTY-FOURTH-WILLIAMS- EAST FORTY-SECOND					6	80	
EAST FORTY-FOURTH							
Carlisle Road to Vandalia		—	—				Extend East Forty-fourth north to connect with Williams. Connect Williams and East Forty-second St. north of Washington. Extend East Forty-second St. north of Douglas Ave.
WILLIAMS							
Dubuque to Washington	60	—	—	4			
EAST FORTY-SECOND							
Washington to Altoona Road	60	—	—	4			
Altoona Road to Douglas	66	—	—	4			
EAST NINTH-WRIGHT							
SOUTHEAST NINTH							
Jackson to Capitol Grounds	80	—	—	6	6	80	
EAST NINTH							
Through Capitol Grounds	70	34	4	4	6	NC	
Grand to Des Moines	90	40	4	6			
Des Moines to University	66	40	4	4	6	80	
University to Washington	80	38	4	6			
Washington to Jefferson	50	34	4	3			
Jefferson to Arthur	60	34	4	4			
Arthur to Boyd	80	34	4	6			
WRIGHT							
Hull to Douglas	50	26	3	3			
EAST THIRTIETH					4	66	
Easton to Sheridan	40	—	—	3			
Sheridan to Douglas	20	—	—	3			
Douglas to City Limits	40	—	—	3			
EAST WASHINGTON					4	66	
Pennsylvania to East Fifteenth	53	—	—	3			
Pennsylvania to East Fourteenth		26	3				
East Fourteenth to East Fifteenth		—	—				
East Fifteenth to East Sixteenth	33	—	—	3			
East Sixteenth to McKinley	25	—	—	3			
McKinley to Delaware	50	—	—	3			
Delaware past East Twenty-fourth	50	—	—	3			
EASTON BOULEVARD							
Total length	66	—	—	4	6	80	
East Eighteenth to Wayne		40	4				
Wayne to Delaware		30	3				
Delaware to East Thirty-third		24	3				
East Thirty-third to Four Mile Creek		20	2				
Four Mile Creek to City Limits		—	—				

NOTE: NC—No change.

APPENDIX A (Continued)

NAME OF STREET	EXISTING WIDTHS IN FEET		TRAFFIC CAPACITY (IN LINES OF VEHICLES)			PROPOSED STREET WIDTH IN FEET	REMARKS
	STREET	ROADWAY	ROADWAY	STREET	PROPOSED FOR STREET		
EIGHTH STREET							
Cherry to Pleasant	66		4	4	4	66	
Cherry to High		42	4				
High to Pleasant		35	4				
ELEVENTH STREET							
Cherry to Grand	66	42	4	4	4	66	
FIFTH STREET							
Through Business District to Grand	66	42	4	4	4	66	Connect with Sixth St. at Washington.
Grand to School	80	56	6	6	6	80	
School to point even with Day	66	30	3	4			
Thence to College	50	26	3	3			
FIFTIETH STREET					4	66	
Hickman to Urbandale	25	3			Extend from Hickman to connect with Fifty-sixth St. at University Ave.
Urbandale to Amick	50	.....	.....	3		
Amick to Hoyt	25	.....	.....	3		
FIFTY-SIXTH AND FIFTY-EIGHTH					6	80	
FIFTY-SIXTH							
C., M. & St. P. R. R. to University	66			4			Connect Fifty-sixth St. with Fifty-eighth St. by cutoff north of University Ave.
Point near R. R. to Walnut Hill Ave.		20	2				
Walnut Hill Ave. to Waterbury Road		26	3				
Waterbury Road to University .....	.....	.....			
FIFTY-EIGHTH							
University Ave. to City Limits	66			4			
University to Douglas				
Douglas to City Limits (Merle Hay Road)		40	4				
FOREST AVENUE							
Beaver Avenue to Thirty-fourth	66	40	4	4	8	100	Correct connection from Ohio to Illinois and from Illinois to University Ave. Correct jog at Fifth St.
Thirty-fourth to Thirty-second	63	30	3	4			
Thirty-second to Seventeenth	66						
Thirty-second to Thirtieth		30	3	4	8	100	
Thirtieth to Seventeenth		30	3	4	4	66	
Seventeenth to Sixteenth	60	30	3	4		NC	
Sixteenth to Eleventh	66	30	3	4		66	
Eleventh to Ninth	58	30	3	4			
Ninth to Seventh	50	34	4	3			
Seventh to Bluff	66			4			
Seventh to Fifth		34	4				
Fifth to Bluff		26	3				
Bluff to Ohio	50	26	3	3			
FORTY-SECOND, FORTY-FIRST, BEAVER					6	80	Extend Norwalk Rd. north- ward from Park Ave. to Forty-second St. at C., M. & St. P. R. R. Connect Forty-second St. with For- ty-first by a short cutoff south of University Ave.
FORTY-SECOND							
C., M. & St. P. R. R. to Grand	66			4			
R. R. to Glenview Drive .....		.....	.....	
Glenview Drive to Lowell Drive		24	3				
Lowell Drive to Grand		26	3				
Grand to School	63	30	3	4			
School to University	60	30	3	4			
FORTY-FIRST							
University to Forest	50	24	3	3			
Forest to Huntland	60	30	3	4			
Huntland to Beaver	50	30	3	3			
Beaver Avenue to City Limits	66	40	3	4			

NOTE: NC—No change.

APPENDIX A (Continued)

NAME OF STREET	EXISTING WIDTHS IN FEET		TRAFFIC CAPACITY (IN LINES OF VEHICLES)			PROPOSED STREET WIDTH IN FEET	REMARKS
	STREET	ROADWAY	ROADWAY	STREET	PROPOSED FOR STREET		
FOURTH STREET							
Court to Alley North of Locust.....	66	42	4	4	4	66	
Alley to Grand.....	60	34	4	4		NC	
GRAND AVENUE.....					6	80	
City Limits to Forty-second.....	66			4			
City Limits to Fifty-sixth.....		30	3				
Fifty-sixth to Forty-second.....		40	4				
Forty-second to Twenty-first.....	80	40	4	6			
Twenty-first to Eighteenth.....	73	40	4	6			
Eighteenth to Penn.....	80	56	6	6			
Penn. to East Thirteenth.....	92			6			
Penn. to East Twelfth.....		56	6				
East Twelfth to East Thirteenth.....		48	5				
East Thirteenth to East Eighteenth.....	80	48	5	6			
East Eighteenth to Thirtieth.....	100	40	4	8			
HICKMAN-ST. JOSEPH-PROSPECT ROAD.....					4	66	Correct jog between Hickman and St. Joseph. Connect Prospect Rd. with North Sixth St.
HICKMAN							
City Limits to Fifty-fourth.....	53	20	2	3			
Fifty-fourth to Forty-fourth.....	40	20	2	3			
Forty-fourth to Thirty-sixth.....	50			3			
Forty-fourth to Forty-first.....		20	2				
Forty-first to Thirty-sixth.....		25	3				
Thirty-sixth to Thirty-fourth.....	40	21	2	3			
Thirty-fourth to Twenty-third.....	33			3			
Thirty-fourth to Thirtieth.....		21	2				
Thirtieth to Twenty-third.....		---	---				
ST. JOSEPH							
Twenty-third to Twentieth.....	50	---	---	3			
Twentieth to Prospect Road.....	40	---	---	3			
Twentieth to Sixteenth.....		20	2				
Sixteenth to Prospect Road.....		---	---				
PROSPECT ROAD							
Tenth to Ninth.....	50	---	---	3			
Ninth to Sixth.....	60			4			
Ninth to Seventh.....		26	3				
Seventh to Sixth.....		30	3				
HIGH							
Twenty-sixth to Sixth.....	66			4	4	66	
Twenty-sixth to Nineteenth.....		30	3				
Nineteenth to Twelfth.....		34	4				
Twelfth to Sixth.....		42	4				
INGERSOLL.....					8	100	Extend westward from Fifty-ninth St.
Fifty-ninth to Fifty-sixth.....	30	26	3	3			
Fifty-sixth to Country Club.....	49	26	3	3			
Country Club to Forty-ninth.....	53	20	2	3			
Forty-ninth to Seventeenth.....	100			8			
Forty-ninth to Polk Boulevard.....		20	2				
Polk Boulevard to Forty-second.....		---	---				
Forty-second to Thirty-fifth.....		2-19½	4				
Thirty-fifth to Seventeenth.....		2-20	4				
LOCUST							
Seventeenth to River.....	66	42	4	4	4	66	
MILLMAN ROAD AND VALLEY DRIVE							
MILLMAN ROAD.....	66	---	---	4	6	80	Change alignment of Valley Dr. for a direct connection with Millman Rd. Connect Clifton extension south of river with Valley Dr.

NOTE: NC—No change.

APPENDIX A (Continued)

NAME OF STREET	EXISTING WIDTHS IN FEET		TRAFFIC CAPACITY (IN LINES OF VEHICLES)			PROPOSED STREET WIDTH IN FEET	REMARKS
	STREET	ROADWAY	ROADWAY	STREET	PROPOSED FOR STREET		
VALLEY DRIVE	66			4			
To Southwest Thirtieth.....		---	---				
Southwest Thirtieth to Southwest Twenty-eighth		20	2				
Southwest Twenty-eighth to Southwest Twenty-first		20	2				
MULBERRY					4	66	
Fifteenth to Fifth.....	66			4	4	66	
Fifteenth to Thirteenth.....							
Thirteenth to Fifth.....		42	4				
PARK AVENUE					6	80	
City Limits to Southwest Twenty-eighth.....	66	---	---	4			Extend eastward from Southeast Twenty-second to River, thence diagonally northeast to City Limits.
Southwest Twenty-eighth to Southwest Fourteenth	33			3			
Southwest Twenty-eighth to Bloomfield Road		---	---				
Bloomfield Road to Southwest Four- teenth		21	2				
Southwest Fourteenth to Southwest Ninth.....	66	26	3	4			
Southwest Ninth to South Union.....	50			3			
Southwest Ninth to Southwest Sixth.....		25	3				
Southwest Sixth to South Union.....		---	---				
South Union to Southeast Fifth.....	58	---	---	4			
Southeast Fifth to Southeast Twenty-second	50	---	---	3			
PARK STREET							
Keosauqua to Alley past Fifth.....	66			4	4	66	
Keosauqua to Fifth.....		34	4				
RAAZ AVENUE					6	80	
West City Limits to Southwest Fifty-ninth.....	66	---	---	4			Extend eastward to con- nect with new diagonal and also connect with Fifty- sixth St.
SCOTT							
Southeast Fourth to Southeast Twenty-first	80	---	---	6	6	80	Correct jog at Southeast Twenty-first. Make connec- tion east of C., R. I. & P. R. R.
Southeast Twenty-first to Southeast Twenty- second	50	---	---	3			
Southeast Twenty-second to Dean Lake.....	30	---	---	3			
Southeast Twenty-fifth Street Court to Southeast Twenty-sixth	30	---	---	3			
Southeast Twenty-sixth to Southeast Thirty-sixth	60	---	---	4			
Southeast Thirty-sixth to City Limits.....	66	---	---	4			
SECOND, FIRST, BLUFF AND NORTH SECOND STREET							Correct jog at University and carry across river.
SECOND							
Elm to Center.....	66			4		NC	
Elm to Grand.....		42	4				
Grand to Center.....		34	4		6	80	
FIRST STREET							
Center to University.....	40	---	---	3			
BLUFF							
University to Franklin.....	66	26	3	4			
NORTH SECOND							
Watson to Holcomb	25	---	---	3			
Holcomb to Sheridan.....	30	---	---	3			
Sheridan to New York.....	66	---	---	4			
New York to Euclid.....	60	34	4	4			
Euclid to Douglas.....	70	30	3	4			
Douglas to City Limits.....	60			4			
Douglas to Seneca		---	---				
Seneca to Madison		26	3				
Madison to City Limits.....		25	3				

NOTE: NC—No change.

APPENDIX A (Continued)

NAME OF STREET	EXISTING WIDTHS IN FEET		TRAFFIC CAPACITY (IN LINES OF VEHICLES)			PROPOSED STREET WIDTH IN FEET	REMARKS	
	STREET	ROADWAY	ROADWAY	STREET	PROPOSED FOR STREET			
SEVENTH								
Through Business District to point past Laurel Street.....	66			4			Correct jog at City Limits.	
To Chestnut.....		42	4		4	66		
Chestnut to Center.....		42	4		6	80		
School past Laurel.....		32	3		6	80		
Thence to Prospect Road.....	50			3				
To Indiana.....		32	3					
Indiana to Franklin.....		30	3					
Franklin to Prospect Road.....		26	3					
SHERIDAN, PROSPECT ROAD AND HULL								
					4	66		
SHERIDAN AVENUE							Extend Sheridan Ave. from Thirtieth to connect with Urbandale Ave. and from Twenty-seventh to connect with Prospect Rd. Extend Prospect Rd. to connect with Sheridan at North Sixth. Correct jog in Sheri- dan between North Second and North Fourth. Con- nect between East Four- teenth and Delaware and between East Twenty-fifth and East Twenty-seventh to complete connection with Ave. Frederick Hubbell. Open remainder of Hull from Ave. Frederick Hub- bell to City Limits. Correct jog at City Limits.	
Thirtieth to Twenty-seventh		20						
PROSPECT ROAD								
Twentieth to Thirteenth.....		50						
SHERIDAN AVENUE								
North Sixth to North Fourth.....		50						
North Second to Saylor.....		66						
North Second to North First.....		.....	.....			
North First to Saylor.....		26	3					
Saylor to East Fourteenth.....	50	26	3	3				
Delaware to East Twenty-third.....		.....	.....			
East Twenty-third to East Twenty-fifth.....	50	.....	.....	3		
HULL								
East Thirty-fifth to East Thirty-eighth.....	40	.....	.....	3		
SIXTH STREET.....								
Cherry to Grand.....	66	42	4	4	6	80	Connect between Vine St. and Grand Ave. and ex- tend northward from Uni- versity Ave. to City Limits.	
Grand to Chestnut.....	70			4		NC		
Grand to High.....		42	4					
High to Chestnut.....		56	6					
Chestnut to School.....	80	56	6	6				
School to Ascension.....	60	36	4	4				
Ascension to University.....	51	36	4	4				
University to Clark.....	60	40	4	4				
Clark, one-half block.....	63	40	4	4				
One-half block to Franklin.....		40	4					
Franklin to Bridge.....		36	4					
Bridge to Park Drive.....		33	3					
Park Drive to Corning.....		30	3					
Corning to Boston.....		40	4					
Boston to Ovid.....		30	3					
Ovid to Euclid.....		38	4					
Euclid to City Limits.....		40	4					
SIXTY-THIRD STREET.....								
C., R. I. & P. R. R. to Locust.....	66	4	6	80		
Locust to Vine.....	33	.....	.....	3		
Center to University.....	80	.....	.....	6		
SOUTHEAST FIFTH, SIXTH AND SAYLOR								
					6	80		
SOUTHEAST FIFTH							Develop as a continuous thoroughfare by extending Sixth north of University	
City Limits to Park Avenue.....	45	.....	.....	3		
Park Avenue to East Broad.....	66	.....	.....	4		

NOTE: NC—No change.

APPENDIX A (Continued)

		EXISTING WIDTHS IN FEET		TRAFFIC CAPACITY (IN LINES OF VEHICLES)			PROPOSED STREET WIDTH IN FEET	REMARKS	
NAME OF STREET	STREET	ROADWAY	ROADWAY	STREET	PROPOSED FOR STREET				
SOUTHEAST SIXTH									
Indianola to River.....	66			4			to Saylor Rd. Connect Southeast Fifth with South- east Sixth between East Broad and Indianola.		
Indianola to Lacona.....		24	3						
Lacona to Hartford.....		30	3						
Hartford to River.....		24	3						
River to Longfellow.....	80			6					
River to Elm.....		24	3						
Elm to Court.....		26	3						
Court to Locust.....		56	6						
Locust to Grand.....		54	6						
Grand to Maple.....		48	4						
Maple to Longfellow.....		34	4						
Longfellow to Filmore.....	60			4					
Longfellow to Fremont.....		34	4						
Fremont to Filmore.....		----	----						
SAYLOR ROAD									
Through Union Park.....	66	30	3	4					
Guthrie to Sheridan.....	66	26	3	4					
SOUTHEAST FIRST STREET									
Indianola to River.....	66	----	----	4	4	66	Extend across River to con- nect with Scott St.		
SOUTHEAST AND EAST FOURTEENTH.....									
City Limits to Indianola.....	40	----	----	3		80	Connect between Allen and Court.		
Indianola to Park Avenue Road.....	50	----	----	3					
Park to Glenwood Drive.....	63	----	----	4					
Glenwood Drive to King.....	30	----	----	3					
King to East Bell.....	55	----	----	3					
East Bell to Lacona.....	30	----	----	3					
Lacona to East Davis.....	60	----	----	4					
East Davis to Hartford.....	55	----	----	3					
Hartford to River.....	30	----	----	3					
River to Harriet.....	33	----	----	3					
Harriet to Scott.....	80	----	----	6					
Scott to Market.....	33	----	----	3					
Court to Walnut.....	80	26	3	6					
Walnut to University.....	60	34	4	4					
University to Washington.....	80	34	4	6					
Washington to Osceola.....	66	34	4	4					
Osceola to Thompson.....	71	34	4	4					
Thompson to City Limits.....	66								
Thompson to Hull.....		34	4						
Hull to City Limits.....		20	2						
SOUTHEAST THIRTIETH AND EAST TWENTY-NINTH.....									
SOUTHEAST THIRTIETH									
Granger to Dean.....	66			4			Extend Thirtieth St. from Washington to connect with East Twenty-ninth St. and onward diagonally to Sheri- dan east of Delaware.		
Granger to C., R. I. & P. R. R.....		20	2						
R. R. to Dean.....		30	3						
Dean to Grand.....	57	40	4	3					
Grand to Maple.....	56	40	4	3					
Maple to East University.....	66	40	4	4					
East University to Cleveland.....	50	----	----	3					
Cleveland to Washington.....	40	----	----	3					
EAST TWENTY-NINTH									
Easton to City Limits.....	66			4	4	66			
Easton Avenue to Frederick Hubbell		30	3						
Avenue Frederick Hubbell to City Limits.....		20	2						

NOTE: NC—No change.

APPENDIX A (Continued)

NAME OF STREET	EXISTING WIDTHS IN FEET		TRAFFIC CAPACITY (IN LINES OF VEHICLES)			PROPOSED STREET WIDTH IN FEET	REMARKS
	STREET	ROADWAY	ROADWAY	STREET	PROPOSED FOR STREET		
SOUTHEAST TWENTY-FIFTH STREET COURT-SOUTHEAST TWENTY-SIXTH					4	66	Connect Southeast Twenty-fifth St. Court with Southeast Twenty-sixth St. between Market St. and C., R. I. & P. R. R. Property. Connect Twenty-sixth St. between East University Ave. and State St. Extend north across Easton to City Limits.
SOUTHEAST TWENTY-FIFTH							
C., B. & Q. R. R. Ave.....	25	----	----	3			
R. R. Ave. to Market.....	50	----	----	3			
SOUTHEAST TWENTY-SIXTH							
Through C., R. I. & P. R. R. Property.....	----	----	----	----			
R. R. to Dean.....	30	----	----	3			
Dean to East University.....	60	----	----	4		NC	
State to Chicago.....	60	----	----	4			
SOUTHEAST TWENTY-SECOND					4	66	
Evergreen to Park.....	60	----	----	4		NC	
Park to Hartford.....	66	----	----	4			
SOUTH UNION					4	66	Connect with Indianola, from West Davis to East Fulton.
City Limits to Thornton.....	50	----	----	3			
Thornton to Park.....	40	----	----	3			
Park to East Creston.....	33	----	----	3			
East Creston to West Davis.....	50	----	----	3			
SOUTHWEST FIFTH-JACKSON- GRANGER-HARTFORD					4	66	Connect Jackson and Granger between Southeast Ninth and Southeast Fourteenth. Connect Granger and Hartford. Correct jog in Hartford at Park Ave.
SOUTHWEST FIFTH							
Through Business District to River.....	66	42	4	4			
JACKSON	66			4			
River to Southeast Sixth.....		26	3				
Southeast Sixth to Southeast Ninth.....		----	----				
GRANGER							
Southeast Fourteenth to Southeast Sixteenth.....	50	----	----	3			
HARTFORD on to City Limits.....	66	----	----	4			
SOUTHWEST FOURTEENTH					4	66	
City Limits to Park Avenue.....	66	----	----	4			Connect between Park Ave. and West Section. Connect with the Clifton extension along C. & G. W. R. R.
Park Avenue to Pleasant View Drive.....	50	----	----	3			
West Section to Gray.....	60	----	----	4		NC	
SOUTHWEST NINTH	66			4	6	80	
City Limits to Park.....		20	2				
Park, point above Tuttle.....		28	3				
Thence to Cherry.....		42	4				
Cherry to Keosauqua Way (Through Business District)		50	5			NC	
SOUTHWEST SEVENTH-INDIANOLA					6	80	Connect Southwest Thirty-first with Southwest Thirtieth by a cutoff north of Park Ave. Extend Twen-
SOUTHWEST SEVENTH							
Through Business District to River.....	66	42	4	4			
INDIANOLA							
River to Southwest First.....	80	30	3	6			
Southeast First to City Limits.....	66			4			
Southeast First to Columbus.....		30	3				
Columbus to City Limits.....		20	2				
SOUTHWEST THIRTY-FIRST, THIRTIETH, TWENTY-EIGHTH AND THIRTIETH							

NOTE: NC—No change.

APPENDIX A (Continued)

NAME OF STREET	EXISTING WIDTHS IN FEET		TRAFFIC CAPACITY (IN LINES OF VEHICLES)			PROPOSED STREET WIDTH IN FEET	REMARKS
	STREET	ROADWAY	ROADWAY	STREET	PROPOSED FOR STREET		
SOUTHWEST THIRTY-FIRST City Limits to Park Avenue.....	66	20	2	4	4	66	ty-eighth St. south from R. R. to Valley Dr. Connect Twenty-eighth with Thirtieth St. by a cutoff between University Ave. and Forest Ave. Extend Thirtieth northward to City Limits.
SOUTHWEST THIRTIETH Park Avenue to River.....	60	20	2	4		NC	
TWENTY-EIGHTH R. R. past Gilmore Drive.....	50	18	2	3	6		
Thence to Grand.....	58	30	3	4			
Grand to Cottage Grove.....	66	26	3	4			
Cottage Grove to University.....	63	26	3	4		NC	
THIRTIETH Forest to Hickman.....	60			4		NC	
Forest to College.....		24	3				
College to Hickman.....		20	2				
Hickman to Douglas.....	40			3			
SOUTHWEST TWENTY-FIRST, TWENTY-FIRST AND TWENTIETH							Change connection with business district across river. Extend to Ingersoll. Correct jogs at Center and Cottage Grove.
SOUTHWEST TWENTY-FIRST STREET	66	20	2	4	6	80	
TWENTY-FIRST STREET Ingersoll to High.....	80	50	5	5	6	80	
High to Woodland.....	33	22	2				
Woodland to Pleasant.....	63	20	2	4			
Pleasant to Center.....	33						
	42	20	2	3			
TWENTIETH STREET Center to Cottage Grove.....	53	26	3	3			
Cottage Grove to point below University	60	30	3	4			
To University.....	50	30	3	3			
University to Keosauqua Way.....	66	36	4	4			
TENTH STREET Cherry to Pleasant.....	66	42	4	4	4	66	Extend from Spring Creek Dr. and connect across river to Waverly Lane. Extend from Park St. to connect with Twelfth St. at Woodland Ave.
THIRD STREET Court to Grand.....	66	42	4	4	4	66	
THIRTEENTH STREET AND NORTH TWELFTH					6	80	
THIRTEENTH STREET Park Street to Day Street.....	66	30	3	4			
Day Street to jog.....	63	30	3	4			
Jog to University Avenue.....	60	30	3	4			
University to Spring Creek Drive.....	50	30	3	3			
NORTH TWELFTH Waverly Lane to Oak Park Avenue.....	40			3			
Oak Park Avenue to Madison Avenue.....	50			3			
THIRTY-EIGHTH STREET Beaver to Madison.....	50			3	4	66	
TUTTLE Southwest Eleventh to Southwest Seventh.....	50			3	4	66	Extend west to connect with proposed Sixteenth St. viaduct and east across river to connect with Scott St.
Southwest Eleventh to Southwest Ninth.....							
Southwest Ninth to Southwest Seventh.....		30	3	4			
Southwest Seventh to Southwest Fifth.....	66	30	3				

NOTE: NC—No change.

APPENDIX A (Continued)

NAME OF STREET	EXISTING WIDTHS IN FEET		TRAFFIC CAPACITY (IN LINES OF VEHICLES)			PROPOSED STREET WIDTH IN FEET	REMARKS
	STREET	ROADWAY	ROADWAY	STREET	PROPOSED FOR STREET		
TWELFTH STREET							
Cherry to Woodland.....	66			4	4	66	
Cherry to Mulberry.....		42	4				
Mulberry to High.....		50	4				
High to Woodland.....		42	4				
TWENTIETH, KEOSAUQUA WAY, CHESTNUT STREET							
TWENTIETH					6	80	
Euclid to St. Joseph.....	66	.....	.....	4			Connect Twentieth with Keosauqua Way from a point below Forest Ave.
St. Joseph to Mondamin.....	50	36	4	3			
Mondamin to Clark.....	45	36	4	3			
Clark to Forest.....	66	36	4	4			
KEOSAUQUA WAY	110		8	8		NC	
Keosauqua Way to Chestnut							
Nineteenth to Viaduct.....		56					
Viaduct to Fifteenth.....		64					
Fifteenth to Chestnut.....		78	8				
CHESTNUT							
Keosauqua Way to Fifth.....	110	78	8	8	8	110	
Fifth to Third.....	66	32	3	4	6	80	
Third to Second.....	33	21	2	3	6	80	
UNIVERSITY, FILMORE, EAST UNIVERSITY					6	80	Correct jogs at Ninth, Sixth, East Ninth, East Fourteenth and East Eighteenth.
UNIVERSITY							
City Limits to Thirty-first.....	80			6			
City Limits to Glendale entrance.....		2-10	2				
Entrance to Thirty-first.....		34	4				
Thirty-first to Twenty-first.....	66	34	4	4			
Twenty-first to Fifteenth.....	58			4			
Twenty-first to Seventeenth.....		34	4				
Seventeenth to Fifteenth.....		30	3				
Fifteenth to Fourteenth.....	50	30	3	3			
Fourteenth to Twelfth.....	58	30	3	4			
Twelfth to Sixth.....	50	30	3	3			
Sixth to East Ninth.....	91	42	4	6		NC	
FILMORE							
East Ninth to York.....	80	26	3	6			
York to East Fourteenth.....	60	.....	.....	4			
EAST UNIVERSITY							
East Fourteenth to Dixon.....	50	.....	.....	3			
Dixon to East Eighteenth.....	25			3			
First half block.....							
Second half block.....		26	3				
East Eighteenth to East Seventeenth.....	66			4			
East Eighteenth to Avenue Frederick Hubbell.....		30	3				
Avenue Frederick Hubbell to East Twenty-seventh.....		.....	.....		
East Twenty-seventh to East Twenty-ninth.....	73	.....	.....	6		NC	
East Twenty-ninth to City Limits.....	66			4			
East Twenty-ninth to East Thirtieth.....		36	4				
East Thirtieth past Thirty-second.....		30	3				
Thence to Thirty-third.....		20	2				
East Thirty-third to City Limits.....							

NOTE: NC—No change.

APPENDIX A (Continued)

NAME OF STREET	EXISTING WIDTHS IN FEET		TRAFFIC CAPACITY (IN LINES OF VEHICLES)			PROPOSED STREET WIDTH IN FEET	REMARKS
	STREET	ROADWAY	ROADWAY	STREET	PROPOSED FOR STREET		
URBANDALE AVENUE Merle Hay Road to Leado Avenue.....	100	—	—	8	8	100	City Limits to Merle Hay and Leado to Twentieth St. R. R. right of way 100 feet wide.
MAURY STREET, C., B. & Q. STREET AND VANDALIA ROAD							
MAURY STREET							Connect Maury St. with Scott at Southeast Eight- eenth and with C. B. & Q. St. from Southeast Twen- ty-fourth to Southeast Twenty-sixth. Open cutoff between C. B. & Q. St. and East Thirtieth.
To Railroad.....	80	—	—	6	6	80	
R. R. to Southeast Twenty-fourth.....	66	—	—	4			
C., B. & Q.							
Southeast Twenty-sixth to East Thirtieth	66	—	—	4			
VANDALIA ROAD							
Along C., B. & Q. R. R.....	50	20	2	3			
R. R. to City Limits.....	66	20	2	4			
WALNUT-KASSON							
WALNUT							NC NC
Sixteenth to Fifth.....	66	42	4	4			
Fifth to East Second.....	82½			6			NC
Fifth to River.....		58	6				
River to East Second.....		54	6				
East Second to Kasson.....	74			6			
East Second to East Third.....		50	4				
East Third to East Fourth.....		48	4				
East Fourth to Kasson.....		46	4				80
KASSON	66	46	4	4	6	80	
WATROUS					4	66	Extend and connect, to form a continuous thor- oughfare.
Bloomfield Road to Southwest Fourteenth.....	66	—	—	4			
Southwest Fourteenth to Southwest Ninth.....	50	—	—	3			
Southwest Ninth to South Union.....	40	—	—	3			
South Union to Southeast Fifth.....	50	—	—	3			
Southeast Fifth to Southeast Fourteenth.....	40	—	—	3			
Beyond Indianola Avenue.....	66	—	—	4			66
WEST AND EAST DAVIS.....					4	66	
WEST DAVIS							Connect with Gray Ave. west of Ridge. Extend East Davis south of Granger Park to connect with Hart- ford, etc.
Ridge Avenue to South Union.....	66	26	3	4			
EAST DAVIS							
Indianola to Southeast Fifth.....	50	—	—	3			
Southeast Fifth to Eighth.....	30	—	—	3			
Eighth Street to Southeast Fourteenth.....	50	—	—	3			
Southeast Fourteenth to Southeast Sixteenth	40	—	—	3			66
WEST SECTION, LOOMIS, EAST BROAD AND KING					4	66	
WEST SECTION							
Bloomfield Road to Southwest Four- teenth	60	—	—	4			
LOOMIS							
Southwest Twelfth to Southwest Ninth.....	50	—	—	3			
EAST BROAD							Connect West Section to Loomis between Southwest Fourteenth and Southwest Eleventh. Connect Loomis St. at Southwest Ninth to East Broad at South Union and extend across Indian- ola to connect with King. Extend King to connect with Hartford, etc.
South Union to South Fifth.....	50	—	—	3			
KING							
Eighth Street to Southeast Fourteenth.....	50	—	—	3			
Southeast Fourteenth to Southeast Sixteenth	40	—	—	3			

NOTE: NC—No change.

APPENDIX B

AN ACT AUTHORIZING THE CREATION OF CITY PLAN COMMISSIONS

An Act authorizing the creation of city plan commissions in cities and towns of all classes, providing the manner of appointment of members of such commissions, the terms for which they shall serve, defining the powers of such commissions, authorizing the appropriation of money for the expenses thereof, and providing for levying a tax therefor.

Be It Enacted by the General Assembly of the State of Iowa:

Section 1. The council of each city and town, including commission governed cities and special charter cities, may by ordinance provide for the establishment of a city plan commission for such municipality, consisting of not less than seven members, who shall be citizens of such municipality and who shall be qualified by knowledge or experience to act in matters pertaining to development of a city plan and who shall not hold any elective office in the municipal government and who shall be appointed by the mayor, subject to the approval of the council.

Sec. 2. The term of office of said members shall be five years, except that the members first named shall hold office for such terms, not exceeding five years, that the terms of not more than one-third of the membership will expire in any one year. If any vacancy shall exist on said commission caused by resignation, or otherwise, the mayor shall appoint a successor for the residue of said term. All members of the commission shall serve without compensation except their actual expenses, which shall be subject to the approval of the council.

Sec. 3. Such city plan commission shall choose, annually, at its first regular meeting, one of its members to act as chairman of the commission, and another of its members as vice chairman, who shall perform all the duties of the chairman during his absence or disability, and shall adopt such rules and regulations governing its organization and procedure as may be deemed necessary; and each year shall make a report to the mayor and council of its proceedings with a full statement of its receipts, disbursements, and the progress of its work for the preceding calendar year. Subject to the limitations contained in this act as to the expenditure of funds, it may appoint such assistants as it may deem necessary and prescribe and define their respective duties and fix and regulate the compensation to be paid to the several persons employed by it.

Sec. 4. Such city plan commission shall have full power and authority to make or cause to be made such surveys, studies, maps, plans or charts of the whole or any portion of such municipality and of any land outside thereof which in the opinion of such commission bears relation to a comprehensive plan, and shall bring to the attention of the council and may publish its studies and recommendations.

Sec. 5. No statuary, memorial, or work of art in a public place, and no public building, bridge, viaduct, street fixture, public structure or appurtenance, shall be located or erected, or site therefor obtained, nor shall any permit be issued by any department of the municipal government for the erection or location thereof, until and unless the design and proposed location of any such improvement shall have been submitted to the city plan commission and its recommendations thereon obtained; provided, however, that such requirement for recommendations shall not act as a stay upon action for any such improvement where such commission after thirty days' written notice requesting such recommendations shall have failed to file same; and said recommendations shall not be necessary as to statuary, memorials or works of art in municipalities where municipal art commissions have been established.

Sec. 6. Where such city plan commission exists all plans, plats, or re-plats of subdivisions or re-subdivisions of land embraced in said municipality or adjacent thereto, laid out in lots or plats with the streets, alleys or other portions of the same intended to be dedicated to the public in such municipality shall first be submitted to the city plan commission and its recommendation obtained before approval by the city council.

Sec. 7. No plan for any street, park, parkway, boulevard, traffic-way, river-front, or other public improvement affecting the city plan shall be finally approved by the municipality, or the character or location thereof determined, unless such proposal shall first have been submitted to the city plan commission and the latter shall have had thirty days within which to file its recommendations thereon.

Sec. 8. The council of any such municipality, when it shall have passed an ordinance creating a city plan commission, may annually appropriate a sum of money from the general funds for the payment of the expense of such commission. The said commission shall have full, complete and exclusive authority to expend for and on behalf of such municipality all sums of money so appropriated. All gifts, donations or payment whatsoever which are received by such municipality for city plan purposes shall be placed in the city plan commission fund, to be used by the said commission in the same manner as hereinbefore stated. The said commission shall have no power to contract debts beyond the amount of its income for the current year.

APPENDIX C
PROPOSED BILL REQUIRING APPROVAL OF PLATS

An Act relating to the platting of land and authorizing cities and towns to maintain suits in equity in certain cases to declare plats, when filed and recorded in violation hereof, to be void and to expunge the same from the records.

Be It Enacted by the General Assembly of the State of Iowa:

Section 1. No county auditor or recorder shall hereafter file or record, nor permit to be filed or recorded, any plat purporting to lay out or subdivide any tract of land situated within any city or town or, except as hereinafter provided, within three (3) miles of the limits thereof, into lots and blocks and to dedicate any part thereof for any public use unless such plat has been filed and approved by the council of such city or town as provided in section six thousand two hundred seventy-two (6272) of the code. If in any case the limits of any such city or town at any place less than six miles from the limits of any other city or town, then at such place jurisdiction to approve plats shall extend to a line equi-distant between the limits of said cities and towns.

Sec. 2. This act may be enforced by suit in equity in the District Court instituted by the mayor of any city or town who is authorized so to do by resolution of the council having authority to approve such plat. The court shall declare to be void and order expunged from the records any plat filed and recorded in violation of this act.

APPENDIX D
PROPOSED BUILDING LINE BILL

An Act to amend the law as it appears in sections fifty-seven hundred fifty-seven (5757) and fifty-seven hundred fifty-eight (5758), Code of 1924, relating to the establishment of building lines by ordinance and providing for notice thereof and for hearing objections thereto, by adding further provisions authorizing certain cities to establish such building lines by ordinance for the purpose of widening the streets within the limits of such building lines at the expiration of the time that may be provided in such ordinance for the widening of any such street, and providing the method of procedure for the establishment of such lines, and for determining the rights of owners of any property affected thereby to damages; fixing the measure thereof; limiting the time within which actions for damages shall be brought, and providing how much damages, when assessed, shall be paid by such cities.

Be It Enacted by the General Assembly of the State of Iowa:

Section 1. That the law as it appears in sections fifty-seven hundred fifty-seven (5757) and fifty-seven hundred fifty-eight (5758), Code of 1924, be and the same is hereby amended by adding thereto the provisions contained in the following sections two (2) to nine (9) inclusive.

Sec. 2. Upon the final passage of an ordinance for the establishment of any building line or lines, the city shall be conclusively held to have taken an easement of way over all lands lying between the existing street and the building line or lines established by such ordinance, and the owners of such lands shall thereupon be entitled to compensation in such manner as the same would accrue to owners of lands or other property taken by the public for public use, under the laws of eminent domain of the State of Iowa. No notice of the taking of such easement to the owner of any property affected thereby shall be required other than the passage of such ordinance.

Sec. 3. If the purpose of establishing such building line shall be to widen the street extending in front of the property on which said building line is established, that fact shall be plainly stated in the ordinance and in the proposed resolution provided for in section fifty-seven hundred fifty-eight (5758), Code of 1924, and such ordinance shall provide that at a future time to be therein specified, not later than twenty-five (25) years after the passage of such ordinance, the city shall widen the street to the line or lines established in such ordinance; but between the time of the passage of such ordinance and the time fixed therein at which the street shall be widened to such a line or lines, the owners of the lands over which the city has acquired the easement aforesaid shall have the right to make any lawful use of such lands not inconsistent with the right of the city under its easement, or inconsistent with the provisions of this act, including the right to maintain upon such land any building, structure or appurtenances existing thereon at the time of the passage of such ordinance.

Sec. 4. The city passing such ordinance may proceed to the assessment of damages to the owners of the lands affected thereby under the law relating to eminent domain; and the owners of such lands shall likewise have the right to institute in any court of competent jurisdiction their actions to have assessed the damages sustained by them, but no action shall be brought by any owner of property affected by such ordinance for damages by reason of the taking of such easement, unless the action shall have been brought within twelve months of the final passage of the ordinance establishing such line or lines; provided, however, that this shall not apply to any person under disability, whose right to bring action is regulated or governed by any other law.

The measure of damage for the taking of such easement under any such ordinance shall be the difference between the value of the land at the time of the taking, without the easement, and the value of the land at the time of the taking, subject to the easement of the city acquiring it under the ordinance; provided, however, that should this provision of this act relating to the rule of damages be held invalid, that the owners of any property affected by taking of

such easement of the city, shall be entitled to such damages as may be awarded them under the laws of the State of Iowa. Nothing herein contained shall be held to give any city passing an ordinance under the provisions hereof, any right, title or interest in or to any building or improvement now or hereafter erected on any land over which the city acquires the easement hereinbefore provided for, or to the use or possession of any land within the line or lines so established until the acquisition of the land as hereinafter provided for.

Sec. 5. At the end of any period that shall be designated in the ordinance for that purpose, the city passing such ordinance shall proceed to widen the street named therein, and to that end shall thereupon proceed to acquire by purchase, condemnation, or otherwise, the lands necessary to be taken for such widening, and the owners of such lands shall be entitled to such damages as they may then be entitled to under the law where private property is taken for public use. Such widening and improving shall be done under any law then existing relating to the widening and improving of any street in any such city, and the cost thereof shall be borne in any manner then provided, by law.

Sec. 6. If, between the time of the passage of any such ordinance and the widening of such street under the ordinance, the owners of lands abutting such building line or lines, are damaged by the passage of such ordinance in any manner other than by the taking of such easement in the land, each shall have a right of action against the city passing such ordinance for any damages legally recoverable for such injury; provided, however, that any such action shall be brought within one year from the time it shall accrue, saving, however, to persons under any legal disability the right to bring such action within such time as may be provided by law.

Sec. 7. That damages for the easement or land taken, or compensation to owners of the land as hereinbefore provided, may be paid by the city out of any general or special fund which may be provided for that purpose under authority of law, and unless the damages or compensation which shall be paid for the easement only prior to the time specified for widening the street shall be paid by special assessments against benefited property, the amounts so paid may be included at the time of the final proceedings for widening the street as a part of the cost of such widening and collected and paid in any manner then provided by law.

Sec. 8. This act shall not limit or abridge any power now or hereafter conferred by law on any city to establish building lines or widen streets, whether under the police power, by eminent domain, or otherwise.

Sec. 9. If any section, clause, paragraph, or part thereof, as the same is included in this act or in sections fifty-seven hundred fifty-seven (5757), or fifty-seven hundred fifty-eight (5758), Code of 1924, shall be held to be invalid or unconstitutional, such invalid part shall not affect the validity of the balance thereof.

APPENDIX E

PROPOSED JOINT RESOLUTION ON EXCESS CONDEMNATION

Proposing an amendment to the constitution of the State of Iowa authorizing the State and all subdivisions thereof and all municipal corporations to acquire lands and appurtenances thereto and easements therein for the purpose of establishing, creating, enlarging and improving parks, highways, boulevards, cemeteries, public buildings and all works that involve the public health, welfare and safety, and to acquire an excess of such lands, appurtenances and easements over that needed for any such purpose on approval of court as being required to protect, preserve or aid in the improvement, and to sell or lease any excess with or without restriction, and to authorize the issuance of bonds to supply the funds in whole or in part to pay for the excess so appropriated or otherwise acquired.

Be It Resolved by the General Assembly of the State of Iowa:

That the following amendment to the constitution of the state of Iowa, is hereby proposed, to-wit:

Section 1. The state and all subdivisions hereof and all municipal corporations may acquire lands and appurtenances thereto and easements therein for the purpose of establishing, creating, enlarging or improving parks, highways, boulevards, cemeteries, public buildings, and all works which involve the public health, welfare and safety and may also acquire appurtenances and easements in excess of that reasonably needed for any such purpose whenever the court finds the excess is reasonably required to protect, preserve or aid in the improvement and is reasonable in quantity therefor. Such excess may be disposed of in accordance with the order of court. Bonds may be issued to supply the funds in whole or in part to pay for the excess property so appropriated or otherwise acquired but said bonds shall be in lien only against the property so acquired for the improvement and excess, and they shall not be a liability of the municipality nor be included in any limitation of the bonded indebtedness of such municipality prescribed by law.

APPENDIX F

RULES TO BE ADOPTED REGULATING THE SUBDIVISION OF LAND

NOTE: These rules are suggestive only. The city of Des Moines does not possess authority to require submission of land subdivision plats to a city plan commission. It is expected, however, that a plan commission will be appointed in Des Moines to perform the usual functions of such a body. In that event, the plan commission will wish formally to adopt a set of rules such as is proposed here. The street plans will guide the commission in passing upon land plats and the rules will set forth for platters the requirements of the commission as to procedure and the general standards which it seeks to introduce into land subdivision practice in Des Moines.

1. Preliminary Plan.

In seeking to subdivide land into building lots and to dedicate streets, alleys, or other lands for public use, the owner shall submit two copies of a preliminary sketch plan to the City Plan Commission before submission of final plan. The preliminary plan shall be at 100 feet to the inch or larger scale, and shall show:

- (a) The location of property lines, buildings, water courses, and other existing features.
- (b) The proposed location and widths of streets, alleys, lots, and building lines, and similar facts regarding existing conditions in property immediately adjacent.
- (c) The title under which the proposed subdivision is to be recorded, and the name of the allotter and of the engineer or surveyor platting the tract.
- (d) The names of all adjoining subdivisions.
- (e) The location and size of existing sewers and water mains, if any, on adjoining property.
- (f) The Commission may require a contour map, showing contour intervals of three (3) or more feet.

The approval of the preliminary plan does not constitute an acceptance of the subdivision.

NOTE: The purpose of requiring submission of a preliminary plan is to give the subdivider of land an opportunity to secure the judgment of the Commission regarding his scheme of streets and lots before he has carried the matter too far. The observance of this requirement may mean a considerable saving to the promoter.

Two copies are required so that one may be corrected or altered by the Plan Commission and returned to the subdivider and the other retained in the files of the Commission.

These preliminary plans should not be unchangeable. They should be rough sketches giving all the information which will be required for a proper estimate of the merits of the subdivision. The necessary data is specifically requested under a, b, c, d, e, and f above. If the subdivider has followed the general rules of the Commission with respect to lot sizes, street widths, alleys and the like and has observed the requirements of the major street plan as it affects his property, his preliminary plan in all likelihood will be approved by the Commission and he will be able then to go ahead with his final plans. If the final plan is merely a refinement of the preliminary and does not differ from it in essentials its acceptance will be a matter of course.

2. Final Plan.

The original and three copies of the final plan shall be submitted to the City Plan Commission. This plan shall be made at 100 feet to the inch or larger scale from an accurate survey drawn on a sheet whose dimensions are 8 inches by 11 inches or multiple thereof.

NOTE: After a land subdivision plan in preliminary form has been checked over and approved by the City Plan Commission, the owner is free to have his final plan prepared. When this is finished, the original and three copies must be brought to the Commission. The final approval of the Commission is placed upon the original and it may be recorded. The three copies are then distributed among the files of the Commission and the City Engineer. The size specified is merely for the purpose of securing uniformity among plans.

The Final plan shall show:

- (a) The boundaries of the property; the lines of all proposed streets and alleys with their width and names; and of any other portions intended to be dedicated to the public use. In the case of branching streets the line of departure from one street to another shall be indicated.

NOTE: These facts and those below are required to be shown upon the final plan in order that the record of each subdivision may be complete. It is certain to lead to confusion and expense if plats are recorded lacking essential information. Every land subdivision plat should show clearly where the property is located, how wide all streets are, who made the plat, who surveyed the property, the dimensions of the tract, the location of corner stones, and similar facts which ought to be on record. It is to safeguard private interests quite as much as those of the general public that the Plan Commission seeks to elevate and standardize subdivision practice, and to require each plat to bear all necessary information. The requirements which follow are more or less self-explanatory.

- (b) The lines of all adjoining properties; the lines of adjacent streets and alleys, with their width and names.
- (c) All lot lines, and numbers for all lots and blocks; building lines and easements with figures showing their dimensions.
- (d) All dimensions, both linear and angular, necessary for locating boundaries of subdivision, lots, streets and alleys, easements and building line set-backs, and any other public or private use. The linear dimensions shall be expressed in feet and decimals of a foot.
- (e) Radii, arcs and chords, points of tangency, central angles for all curvilinear streets; and radii for all rounded corners.
- (f) All monuments together with their descriptions.
- (g) Title and description of property subdivided, showing its location and extent, points of compass, scale of plan, and name of subdivider and of engineer platting the tract; also classification of property under the zoning law, if such exists.

(h) Profiles may be required of all streets and alleys where topography makes it advisable (forty feet horizontal scale and four feet vertical, or fifty feet horizontal and five feet vertical recommended). Major streets shall in so far as possible conform to the contours to avoid grades in excess of three (3) per cent, unless special conditions make it advisable to alter this rule; minor streets to avoid grades in excess of ten (10) per cent.

(i) Any private restrictions shall be shown on plat or reference to them made thereon; and plats shall contain proper acknowledgments of owners and mortgages accepting said platting and restrictions.

NOTE: A subdivision which the owner wishes to put upon the market with certain restrictions should have these restrictions summarized or indicated in a general way upon the plan which is filed for record.

3. Acre Subdivisions.

Where the parcel is subdivided into larger tracts than for building lots, such parcels shall be divided so as to allow for the opening of major streets and the ultimate extension of adjacent minor streets.

NOTE: Owners of real estate on the outskirts of the city frequently wish to plat property in tracts somewhat larger than the ordinary city lots. These acre subdivisions or "small city farms," as they are often called, usually remain in that state only so long as it is possible to preserve their semi-agricultural character. Whenever the growth of the city seems to demand the cutting up of the "small farms," the owners are quick to take advantage of the opportunity. Unless the tract originally has been laid out with the idea of being subdivided later, each individual goes about making a small subdivision of his particular holding without reference to the others. The result is generally the misplacement of streets, confusion among the lots and frequently a squeezing of the land, which is detrimental to the community. This provision of the rules aims to secure consideration of the ultimate subdivision of every tract, regardless of the intermediate stages through which it may pass.

4. Relation to Adjoining Street System.

The arrangement of streets in new subdivisions shall make provision for the continuation of the principal existing streets in adjoining additions (or their proper projection where adjoining property is not subdivided) in so far as they may be necessary for public requirements. In general such streets shall be of a width at least as great as the existing streets. The street and alley arrangement must also be such as to cause no hardship to owners of adjoining property when they plat their own land and seek to provide for convenient access to it.

NOTE: The requirement above is to prevent the creation of unnecessary and absurd jogs and offsets. Des Moines is afflicted with more than its proper share of these impediments to traffic.

5. Street and Alley Widths.

(a) The widths for major streets shall conform to the widths designated on the major street plan.

(b) The minimum width for minor streets shall be fifty (50) feet, except that in cases where the topography or special conditions make a street of less width more suitable the City Plan Commission may waive the above requirements.

NOTE: The most satisfactory width for minor streets is 60 feet. (See Plate Number Seventeen.) When the requirements of the major street plan seem to absorb an unreasonable amount of an owner's land in the view of the City Plan Commission, they may advise the platting of 50-foot streets as a compensation. The Commission likewise should reserve the right to permit streets less than 50 feet wide on hillsides, along streams or bordering parkways, where the requirements of traffic are never likely to make wide streets necessary. In general, however, it should be the aim of the Commission to establish a 60-foot standard for residence streets.

(c) The minimum width of an alley in a residential block shall be twelve (12) feet, if an easement and building line at least three (3) feet wide be provided along each side of the alley; where no easements or building lines are provided the width of alleys shall be at least sixteen (16) feet. A five-foot cut-off shall be made at all acute and right-angle alley intersections. Alleys in rear of business lots shall be at least twenty (20) feet wide.

NOTE: While alleys in residential blocks are referred to and provisions made for minimum widths, the Plan Commission should discourage the platting of alleys except in the rear of property that may some day be used for commercial purposes. The wide alleys required for business lots will serve to relieve the streets of a certain amount of traffic that can at times become very annoying in the vicinity of stores.

(d) Where alleys are not provided, easements of not less than four (4) feet in width shall be provided on each side of all rear lot lines and wide lines where necessary, for poles, wires, conduits, storm and sanitary sewers, gas, water and heat mains. Easements of greater width may be required along lines or across lots where necessary for the extension of main sewers and similar utilities.

NOTE: Modern subdivision practice requires the placing of all poles and wires along rear lot lines instead of in the street. It is often more economical to place sewers, especially trunk sewers, along these lines. For such purposes easements must be indicated upon subdivision plats. The easement widths required above are generally accepted as standard.

6. Blocks.

(a) No blocks shall be longer than one thousand (1,000) feet between street lines.

Blocks over seven hundred fifty (750) feet in length shall have a cross walk near the center of the block. The right of way for such walks shall be not less than ten (10) feet.

NOTE: In the days of the horse-drawn vehicles it was customary to make blocks rather short. The automobile has made longer blocks unobjectionable and generally safer. Wider streets, however, are necessary so there may be a sort of compensation in each subdivision. The minor streets can be made narrow in order that the major thoroughfares may be wide, and the number of cross streets through a given area may be reduced and the space thus gained also added to the width of the principal arteries. To overcome the disadvantage of long blocks to pedestrians, cross walks are needed.

(b) In new subdivisions at a distance from property already platted, block widths shall be established, except for special reasons, at from two hundred forty (240) to three hundred (300) feet.

NOTE: When land is being subdivided at a considerable distance from other subdivisions, there is often a temptation to make lots extra deep and of unusually generous width. The plan of streets adopted under circumstances will, in all probability, not be of the sort that subdividers of adjacent land can follow. The rules require that the street system of a new subdivision conform to those existing in adjacent subdivisions.

Under certain circumstances, this might be a hardship. If a man platting a piece of property two miles beyond the city limits lays out lots 175 feet deep, his streets become 350 feet apart. It may be a number of years before any others plat near him, but when they eventually do so, they may reasonably object to conforming to the street system already established. If all blocks are made between 200 and 300 feet wide, regardless of where they are platted, it will not be difficult to require conformity.

(c) Where it is desired to subdivide a parcel of land which, because of size or location, does not permit an allotment directly related to a normal street arrangement, there may be established a "Place." Such a place may be in the form of a court, a non-connecting street or other arrangement provided, however, that proper access shall be given to all of the lots from a dedicated place (street or court) and the minimum size of each allotment of this sort shall be permanently established so as to assure a building arrangement commensurate with the foregoing requirements for normal additions.

NOTE: This provision makes it possible for an owner of an odd-shaped parcel surrounded on all sides by built-up property to lay out a self-contained "court" or "place." The rule is amplified so as to make it impossible, after such a court or place is laid out and all other regulations complied with, for someone else to enter and further subdivide the lots or change the scheme so as to do harm to the community. These courts or places, especially where dead end streets are involved, are to be avoided if possible. In all cases provision should be made for the free movement of vehicles in and out. A stub end street should be wide enough for vehicles to pass, even if two are standing abreast at the curb, and there should be a turn-around at the end of a diameter sufficient to permit the complete turning of large vehicles.

7. Lots

In all rectangular lots and so far as possible all other lots, the side lines shall be at right angles to the street on which the lot faces. Lots with double frontage shall be avoided.

NOTE: This is a requirement which should be especially emphasized. When lot lines are not at right angles to the street there is confusion in the mind of the builder who wishes to use the lot. If he places his building parallel to the street, it stands askew across his lot, cutting down his space for a drive and making hedges and walks run at peculiar angles to the street. If he places his house square upon the lot, with its sides parallel to the side lines of the lot, his neighbor may do something different. If his neighbor follows his example the houses stand in saw-tooth fashion along the street, the rear of each one exposed to the front of the one next to it. All this annoyance can be avoided if land subdividers will but give reasonable consideration to the interests of those who will make use of the property they expect to sell.

(b) The minimum dimensions for lots shall be forty (40) feet for width and one hundred and twenty (120) feet for depth and in no case shall a rectangular or irregular-shaped lot contain less than forty-eight hundred (4800) square feet.

NOTE: It is not desirable to establish a standard size for all lots. The requirements of lot purchasers differ, the precedent already established in a certain district is hard to break, the effect of topography upon platting cannot always be foreseen.

The Commission should direct attention to the importance of proper lot planning, and enforce requirements which seem to be necessary to protect the public interest. The custom of platting 25-foot lots is productive of building conditions which are not a credit to the city. The City Plan Commission should support a 50-foot standard for the average lot but has written into its rules a 40-foot minimum to cover instances where a 50-foot requirement would be a hardship upon the platler.

The tendency to plat extremely deep lots should also be corrected. In the day of the horse and carriage when stables were common, a deep lot was required in order to keep these nuisances as far from the dwellings as possible. In the present age, however, an excessively deep lot is not particularly advantageous. This is especially true in districts where alleys have been left out. A lot 120 feet deep is adequate for all ordinary residential requirements, yet not so deep as to invite rear dwellings.

An over-intensive use of land generally brings about conditions that are detrimental and the protection of the city from such conditions is a purpose of these rules.

(c) Corner lots shall have extra width, sufficient to permit the maintenance of building lines on both front and side. In normal cases the width required will be not less than the amount of the establishing building line on the side street plus the irreducible buildable width and such side yard requirements as may be provided for by a zoning ordinance.

NOTE: It is desirable to promote a wider use of building lines in new subdivisions. The city has suffered in the past through the tendency of builders to crowd out to the street lines with stores and dwellings. It is impossible to make a first-class city under such conditions. A building line of at least 30 feet should prevail upon every residential street. At corners, especially where lots front upon side streets, the building line should be carried around the corner. The store or home on the corner lot should not violate the building line observed on either street, even though it may distinctly face only one street. The use of a larger lot at the corner is recommended as a means of correcting this condition. A lot wider, by the amount of the building line on the side street, than the general run of those fronting the same direction, will permit the continuance of the building line around the corner and make each street intersection at once safer and more attractive.

(d) Lots on major street intersections and at all other points likely to be dangerous shall have a radius of not less than fifteen (15) feet at the street corner.

NOTE: The reason for this provision is obvious. There is no more urgent need in American cities today than the adoption of roadway and street planning practice to the requirements of modern traffic. Sharp projecting curb corners at thoroughfare crossings are decidedly dangerous to pedestrian and driver alike, due to the sweeping turn that quickly takes an automobile to the wrong side of the intersecting street. A rounding of the corner of each lot at a street intersection will not lessen the value of the lots but will make the roadway much safer.

8. Building Lines.

Building lines shall be shown on all lots intended for residential use of any character, and they shall not be less than required by the zoning ordinance when one is adopted. Until a zoning ordinance is adopted, the City Plan Commission will require building lines in accordance with the needs of each addition. Provision shall be made for all enclosed parts of buildings to be set back of such building lines.

9. Grading of Streets.

A grading plan may be required with the final plan, showing grades approved by the City Engineer.

NOTE: If the Commission questions the adaptability of a street layout to the land which it is to serve, a grading plan of the subdivision may be required. The mere preparation of such a plan may convince the developer of the tract that his scheme is impracticable and more costly than he realized.

10. Parks, Schools, Sites, Etc.

In subdividing property, due consideration shall be given to the dedication of suitable sites for schools, parks and playgrounds, so as to conform as nearly as possible to the recommendations of the City Plan Commission in its General Plan of the city and nearby areas. Such provision should be indicated on the preliminary plan in order that it may be determined when and in what manner such areas will be dedicated to the city.

NOTE: The opportunities for cooperation of the sort implied in the rule above have scarcely yet been touched. Any subdivision of reasonable size, is almost certain to have a church, or a school in it at some time. A neighborhood park of at least twenty acres should be made available for development in each square mile of residential area; and a small park of at least one acre should be laid out for each ten acres of residential property. These incidental features of every residence district should be planned at the time the land is platted. A distribution of a portion of the selling value of these areas among the remaining lots will generally make it possible for the promoter of the subdivision to offer such areas at prices that will permit immediate acceptance. Small areas for parks, if of usable size, may, with profit to the subdivider, be dedicated free to the city, under agreement by the latter to improve the park when the resident population warrants the expense. The advantages of the park may be capitalized in the sale of lots and generally enough additional realized to more than pay the original cost of the land given to the city.

11. Street Names.

Streets that are obviously in alignment with others already existing and named shall bear the names of the existing streets.

12. Change to More Restricted Use District.

Wherever property is subdivided with the intention that it shall have a use more restricted than that designated on the Zone Plan, such use shall be stated and the building lines and other rules affecting such more restricted use shall be shown and noted on the plat.

Such designation shall also constitute a petition to the city to change the use designated for such property on the Zone Plan.

NOTE: Des Moines has no zone plan at this time but expects to have one shortly. It is practically impossible in zoning unplatted areas to determine precisely the uses of property which will be most suitable to the district. The subdivider of the plan must be allowed some latitude. The purpose of the rule above is to permit him to request a change in the zoning regulations if he thinks a more restricted classification of his property desirable.

13. Abstract of Title.

The final plat shall be accompanied by an abstract of title showing the ownership of all property to be dedicated to the city.